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STATE PIER MUNICIPAL DEVELOPMENT PLAN
New London, Connecticut

February 15, 1999

FINAL DRAFT

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STATE PIER MUNICIPAL DEVELOPMENT PLAN
New London, Connecticut

February 15, 1999

FINAL DRAFT

Prepared for:

New London Development Corporation
New London, CT

Sponsoring Agency:

State of Connecticut
Department Economic and Community Development

Prepared by:

Milone & MacBroom, Inc.
716 South Main Street
Cheshire, CT 06410

In Association with:

Harrall-Michalowski Associates, Inc.
2911 Dixwell Avenue
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Contributors:

RKG Associates, Inc. – Market Analysis
HRP Associates, Inc. – Environmental Analysis
The Downes Group – Project Management

AMENDMENTS TO STATE PIER MDP

A. Changes Made Pursuant to Agency Comments

Section 3.2.3, Flood Hazard Area
Winthrop Point noted as being located in 100-year floodplain in response to DEP memorandum of February 11, 1999

Section 3.5.2, Recommendations
Items 8, 9, and 10 added in response to DEP memorandum of February 11, 1999

Section 3.6, Coastal Resources
Entire subsection added in response to DEP memorandum of February 11, 1999

Section 5.1.1, Demolition and Site Plan
Specific language incorporated from January 25, 1999 letter from Deputy State Historic Preservation Officer

Section 5.1.3, Removal of Streets
Clarification regarding removal of Eighth Street made in response to ConnDOT comments of February 11, 1999

Section 5.4, Consistency with Coastal Management Act
New subsection added in response to DEP memorandum of February 11, 1999

Section 7.1, Properties Designed for Acquisition
New paragraph added regarding disposition and availability of State of Connecticut property in response to ConnDOT comments of February 11, 1999

Figure 16, Right-of-Way Adjustments
Note added to map regarding Eighth Street in response to ConnDOT comments of February 11, 1999

Figure 17, Property Disposition
State of Connecticut property used by Fox Navigation deleted in response to ConnDOT comment of February 11, 1999

B. Changes Made Pursuant to DECD Comments

Forward
Table modified with respect to Sections 11, 12, and 13. Note that specific findings were previously included and remain in Section 11.

Section 3.5, Environmental Conditions
Section was added after release of January 20, 1999 draft, but appeared in January 28, 1999 draft

Section 4.4, Rehabilitation Standards and Controls
Reference to "Exhibit B" deleted

Section 5.1, Proposed Site Improvements
Modification to January 20, 1999 draft text noting possible development of Action Area and reference to Concept Plan

Section 5.3, Traffic Impacts
Traffic generation modified to reflect possible ±150,000 square foot building

Section 6.0, Market Analysis
Section added after release January 20, 1999 draft but was included in January 28, 1999 draft

Section 7.3.2, Property Rehabilitation Standards
Reference to "Exhibit B" deleted

Section 10.1, Statement of Jobs to be Created
Section added after release of January 20, 1999 draft but was included in January 28, 1999 draft

Appendix E, Relocation Plan
Deleted from January 28, 1999 draft but included in Final Draft

Appendix F, Boring Logs
Added in this draft

C. Concept Plans

For illustration purposes only, two alternate concept plans have been included as Appendix G in order to demonstrate the feasibility of construction of port-related warehouses partially located in the Action Area.

FORWARD

This document is intended to meet the requirements of the Municipal Development Planning process as defined under Sections 130, 132, and/or 588(l) of the Connecticut General Statutes. Department of Economic and Community Development (DECD) guidelines regarding preparation of municipal development plans have been consulted during this process. The following table cross references these guidelines with text sections herein.

Guideline Reference	Report Section
3.a.	N.I.C.
3.b.	N.I.C.
3.c.	6.0
3.d.	2.2
3.e.	2.1
3.f.	3.1
3.g.	3.3
3.h.	4.1
3.i.	N.I.C.
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1.0 INTRODUCTION

1.1 Purpose of the Plan

The City of New London, acting through its designated agency, The New London Development Corporation (NLDC), in association with the Connecticut Department of Economic and Community Development (DECD) has initiated the preparation of a Municipal Development Plan (MDP) for the area of the City located adjacent to the Thames River referred to as "State Pier." This MDP has been prepared under Sections 130, 132, and/or 588(1) of the Connecticut General Statutes.

The City of New London is a waterfront community along the tidal estuary of the Thames River and Long Island Sound in southeastern Connecticut. New London is only 5.79 square miles in size, making it geographically the second smallest municipality in the State of Connecticut. Nearly 54% of the total land area of New London is exempt from local property taxes.

The State Pier MDP Project Area is approximately 125 acres in size and includes a variety of land uses, most of which are industrial in nature with two pockets of residential properties. The dominant features include Adm. Harold E. Shear State Pier, Central Vermont Railroad Pier, and the tracks owned by New England Central Railroad. Interstate 95 and the Gold Star Bridge traverse the area (see Figure 1).

The City of New London has initiated several projects over the past few years with the goal of revitalizing its economy by focusing on the potential offered by the Thames River corridor. NLDC's mission in undertaking this project is to improve the efficiency of port operations at the State Pier by optimizing the multi-modal transportation linkages of water, rail, and interstate highways, thus stimulating economic development in the area.

PROJECT LOCATION MAP

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

In Association with:
HMA
Harrall Michalowski Associates
Planning Consultants
Hamden, CT

MILONE & MACBROOM
Engineering, Landscape Architecture and Environmental Science
38 South Main Street
Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

—	WJN	VCM
DESIGNED	DRAWN	CHECKED

SCALE 1" = 2000'

DATE JANUARY 21, 1999

PROJECT NO. 1876-02-1

DWG NAME —

FIG. 1

SHEET NO.

ACTION AREA
PROJECT BOUNDARY
NEW LONDON HARBOR
Powder Island
Meadow Beach
Cove Beach
Hope Island
Hope Island Beach
Bartlett Cove Beach
Bartlett Island
Bartlett Island Beach
Bartlett Island Beach
Bartlett Island Beach

support in the areas of market analysis, property appraisal, and environmental assessment has been provided by other consultants for incorporation into this document.

1.2 Project Area and Action Area

The State Pier MDP Project Area encompasses an area of approximately 125 acres generally bounded by Riverside Park on the north; by the Thames River on the east and south; and by Winthrop Cove, Amtrak, and Crystal Avenue on the west. Interstate 95 and the Gold Star Bridge bisect the Project Area. The State Pier (owned by the State of Connecticut), CV Pier, a railroad depot, and several large manufacturing/warehouse buildings dominate the Project Area. Two residential neighborhoods are located within the Project Area. One is situated at the northerly boundary adjacent to Riverside Park and the other, referred to as the "Action Area," is located contiguous to the port area.

Development of State Pier and its adjacent properties is the focus of this Plan. The pier itself is 1,000 feet in length on both sides, has a water depth of 30 to 40 feet, and is capable of handling large cargo vessels. With the lack of warehouse space and efficient outside storage yards, State Pier is underutilized and has yet to reach its peak as a prominent multimodal maritime center.

Located at the heart of port operations is the proposed Action Area. It consists primarily of an isolated group of 16 residential properties located on a hill overlooking the port operations and four parcels owned by the State of Connecticut now used as part of the operations at the Port of New London. The Action Area is surrounded entirely by non-residential land uses associated with the port.

The acquisition and demolition of these homes, the abandonment of the City streets within the Action Area, and the incorporation of some of the vacant land owned by the State of Connecticut would free up 8.6 acres capable of supporting warehousing, outside storage, and other port-related activities. In turn, such development would provide

support in the areas of market analysis, property appraisal, and environmental assessment has been provided by other consultants for incorporation into this document.

Project Area and Action Area

The State Pier MIDP Project Area encompasses an area of approximately 125 acres generally bounded by Riverside Park on the north; by the Thames River on the east and south; and by Winthrop Cove, Amtrak, and Crystal Avenue on the west. Interstate 95 and the Gold Star Bridge bisect the Project Area. The State Pier (owned by the State of Connecticut), CV Pier, a railroad depot, and several large manufacturing/warehouse buildings dominate the Project Area. Two residential neighborhoods are located within the Project Area. One is situated at the northerly boundary adjacent to Riverside Park and the other, referred to as the "Action Area," is located contiguous to the port area.

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State of Connecticut would free up 8.6 acres capable of supporting warehousing, outside storage, and other port-related activities. In turn, such development would provide additional jobs and public revenue, all in support of maritime revitalization.

In preparing the State Pier MDP, NLDC examined the physical characteristics of the entire Project Area including environmental features, land use, transportation and infrastructure. Alternative development options for the Project Area were evaluated on a preliminary basis to understand the relationship between the Action Area and the entire Project Area and to be sure that proposed uses and actions within the Action Area would not adversely affect existing adjacent land uses or preclude future economic development opportunities in or near the Project Area.

f15spmdp-jea.doc

2.0 PROPERTY DESCRIPTIONS

A topographic survey of the entire Project Area has been obtained utilizing the City of New London's recent aerial flight digitized by Aerotech, Inc. specifically for this MDP. Ground control was provided by Milone & MacBroom, Inc.

The boundary for the Project Area has been compiled from existing maps available from the City of New London. Property lines for individual parcels have been compiled from the City's tax maps. The boundary for the Action Area has been field surveyed to an A-2 standard of accuracy.

2.1 Property Description – Project Area

The following is a legal description of the Project Area as illustrated on Figure 2:

State Pier Municipal Development Area

A certain parcel of land situated in the City of New London, County of New London and State of Connecticut being more particularly bounded and described as follows:

Beginning at a point at the intersection of the southeasterly street line of Governor Winthrop Boulevard and the southwesterly street line of Water Street;

thence running northwesterly 1,500 feet more or less along the southwesterly street line of Water Street to a point;

thence running northerly 1,570 feet more or less along the westerly street line of Crystal Avenue to a point;

thence running southwesterly 365 feet more or less along the extension of the southeasterly street line of Lewis Street to a point;

FIG. 2

MILONE & MACBROOM

78 South Main Street
Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

JFK | VCM

1" = 300'

JANUARY 21, 1999

1879-02-1

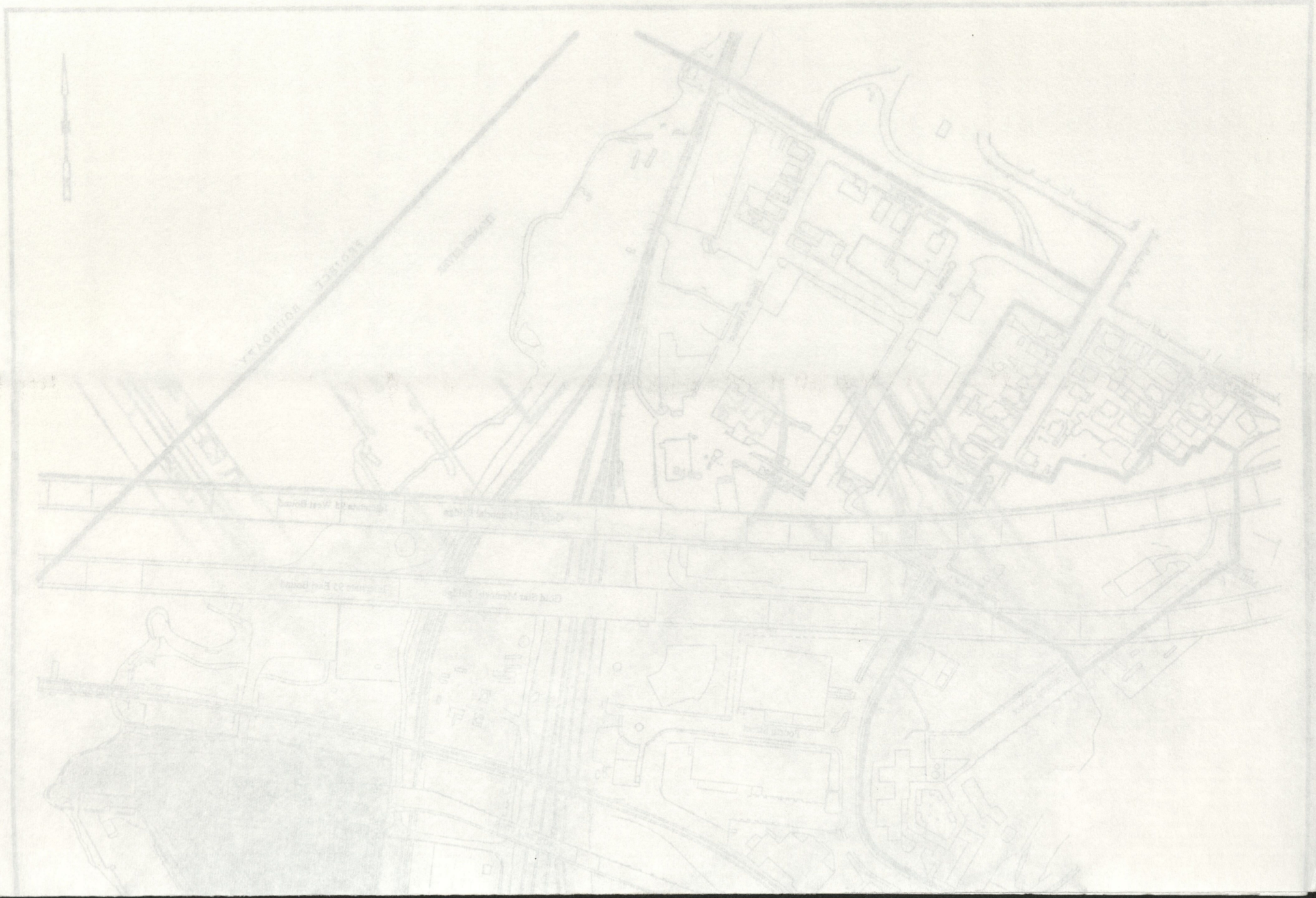
M:\—PROP.DWG

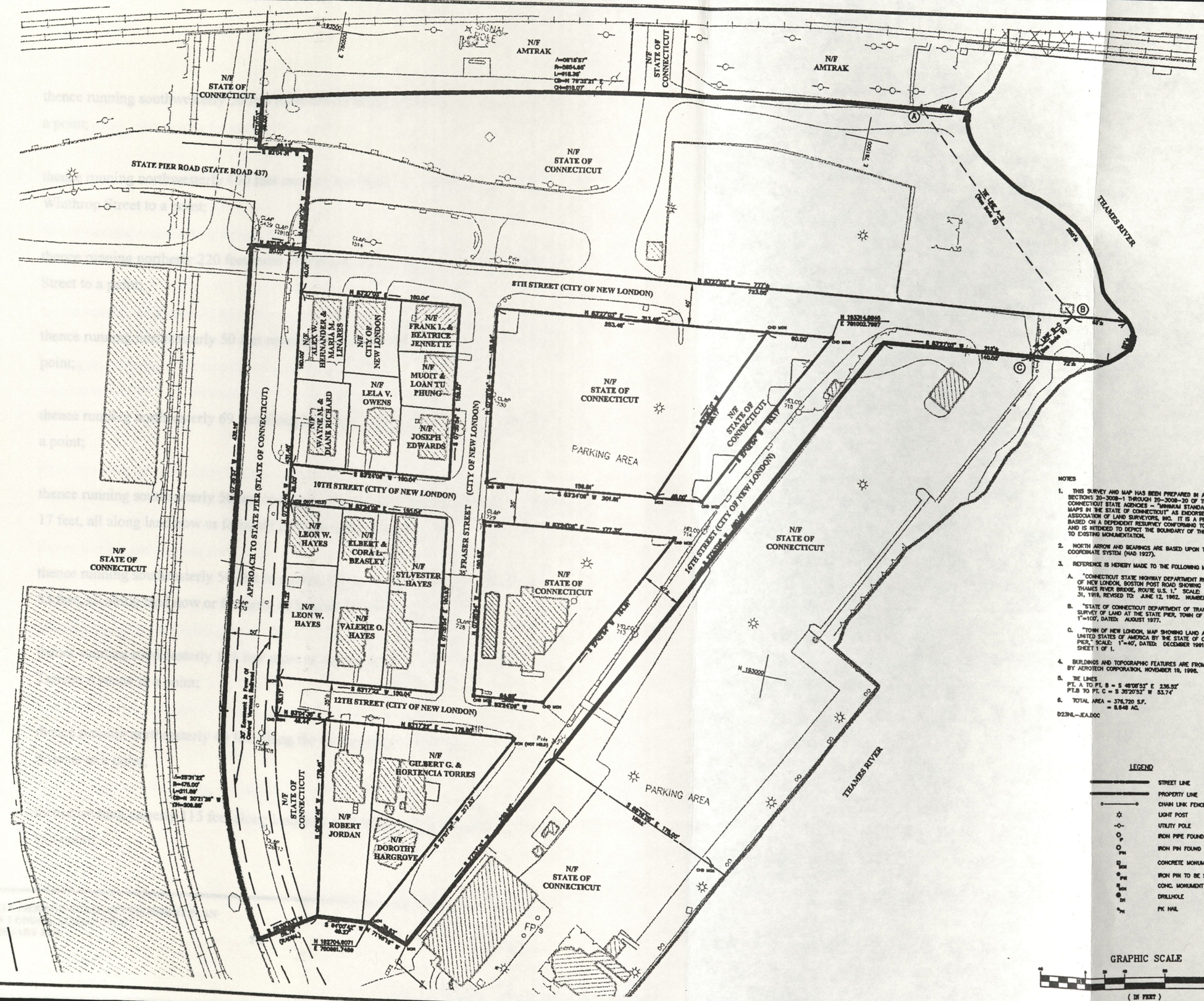
OVERALL PROJECT AND ACTION AREA MAP

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

In Association with:
HMA
Harrall Michalowski Associates

Planning Consultants
Hamden, CT




N/F AMTRAK
N/F STATE OF CONNECTICUT
SIGNAL POLE
STATE PIER ROAD (STATE ROAD 437)
8TH STREET (CITY OF NEW LONDON)
10TH STREET (CITY OF NEW LONDON)
12TH STREET (CITY OF NEW LONDON)
16TH STREET (CITY OF NEW LONDON)
FRASER STREET (CITY OF NEW LONDON)
APPROACH TO STATE PIER (STATE OF CONNECTICUT)
THAMES RIVER
PARKING AREA
N/F ALEX W. HERNANDER & MARIA M. LINARES
N/F CITY OF NEW LONDON
N/F FRANK L. & BEATRICE JENNETTE
N/F MUOIT & LOAN TU PHUNG
N/F LELA V. OWENS
N/F WAYNE L. & DIANE RICHARD
N/F JOSEPH EDWARDS
N/F LEON W. HAYES
N/F ELBERT & CORA L. BEASLEY
N/F SYLVESTER HAYES
N/F LEON W. HAYES
N/F VALERIE O. HAYES
N/F GILBERT G. & HORTENCIA TORRES
N/F ROBERT JORDAN
N/F DOROTHY HARGROVE
N/F STATE OF CONNECTICUT (PARKING AREA)
N/F STATE OF CONNECTICUT (16TH STREET)
N/F STATE OF CONNECTICUT (THAMES RIVER)
N/F STATE OF CONNECTICUT (APPROACH TO STATE PIER)
N/F STATE OF CONNECTICUT (FRASER STREET)
N/F STATE OF CONNECTICUT (8TH STREET)
N/F STATE OF CONNECTICUT (AMTRAK)
N/F STATE OF CONNECTICUT (10TH STREET)
N/F STATE OF CONNECTICUT (12TH STREET)
N/F STATE OF CONNECTICUT (PARKING AREA)
N/F STATE OF CONNECTICUT (THAMES RIVER)
N/F STATE OF CONNECTICUT (STATE PIER ROAD)
N/F STATE OF CONNECTICUT (AMTRAK)
N/F STATE OF CONNECTICUT (PARKING AREA)
N/F STATE OF CONNECTICUT (THAMES RIVER

thence running southwesterly 50 feet more or less along a portion of Winthrop Street to a point;

thence running northwesterly 460 feet more or less along the southwesterly street line of Winthrop Street to a point;

thence running northerly 220 feet more or less along the westerly street line of Cole Street to a point;

thence running northeasterly 50 feet more or less along a portion of Cole Street to a point;

thence running northeasterly 69 feet along land now or formerly of David W. Gill, Sr. to a point;

thence running southeasterly 50 feet to a point, thence turning and running northeasterly 17 feet, all along land now or formerly of Fleta Jackson, to a point;

thence running southeasterly 50 feet to a point, thence turning and running northeasterly 83 feet, all along land now or formerly of Stephen Pualo, to a point;

thence running southeasterly 115 feet more or less along the southwesterly street line of Terrace Avenue to a point;

thence running northeasterly 40 feet along the southeasterly street line of Terrace Avenue to a point;

thence running easterly 115 feet along land now or formerly of the City of New London to a point;

thence running southwesterly 50 feet more or less along a portion of Winthrop Street to a point;

thence running northwesterly 460 feet more or less along the southwesterly street line of Winthrop Street to a point;

thence running northerly 220 feet more or less along the westerly street line of Cole Street to a point;

thence running northeasterly 50 feet more or less along a portion of Cole Street to a point;

thence running northeasterly 69 feet along land now or formerly of David W. Gill, Sr. to a point;

thence running southeasterly 50 feet to a point, thence turning and running northeasterly 17 feet, all along land now or formerly of Fleta Jackson, to a point;

thence running southeasterly 50 feet to a point, thence turning and running northeasterly 83 feet, all along land now or formerly of Stephen Paulo, to a point;

thence running southeasterly 115 feet more or less along the southwesterly street line of Terrace Avenue to a point;

thence running northeasterly 40 feet along the southeasterly street line of Terrace Avenue to a point;

thence running easterly 115 feet along land now or formerly of the City of New London to a point;

thence running southerly 58.5 feet to a point, thence turning and running easterly 95 feet, all along land now or formerly of Margaret H. Omalley, to a point;

thence running easterly 50 feet along a portion of Crystal Avenue to a point;

thence running southeasterly 95 feet more or less along the northeasterly street line of Crystal Avenue to a point;

thence running northeasterly 65 feet to a point, thence turning and running southeasterly 12.4 feet to a point, thence turning and running northeasterly 110 feet to a point, thence turning and running northwesterly 54 feet to a point, thence turning and running southwesterly 19.8 feet, all along land now or formerly of Kimberly A. Carrigan, to a point;

thence running northwesterly 56 feet to a point, thence turning and running southwesterly 15 feet, all along land now or formerly of Esther Filangeri, to a point;

thence turning and running northwesterly 340 feet along land now or formerly of David M. Johnson, land now or formerly of Kenneth R. Olson, land now or formerly of U.S. Army Corp of Engineers, land now or formerly of Sharon E. Salen, land now or formerly of Jeffrey D. Longhenry and land now or formerly of Ruperta C. Uhler, each in part, to a point;

thence running southwesterly 150 feet along land now or formerly of Ruperta C. Uhler to a point;

thence running northwesterly 109 feet along the northeasterly street line of Crystal Avenue to a point;

thence running northeasterly 1,365 feet more or less along the northwesterly street line of Adelaide Street and along the extension of said street line to a point;

thence running South 45°-00'-00" East 2,035 feet more or less to a point, thence turning and running South 02°-00'-00" East 2,410 feet to a point, thence turning and running South 60°-00'-00" West 780 feet to a point, thence turning and running North 35°-00'-00" West 1,120 feet more or less, all along a portion of land of the State of Connecticut, to a point;

thence running southwesterly 555 feet more or less along land of the State of Connecticut and land now or formerly of Thames Shipyard & Repair Company, each in part, to a point;

thence running southeasterly 190 feet more or less along the southwesterly street line of Ferry Street to a point;

thence running southwesterly along the extension of the southeasterly street line of Governor Winthrop Boulevard to the point of beginning.

Being more particularly bounded and described on a map entitled: "Project Boundary Map, State Pier Municipal Development Plan, New London, Connecticut," Scale: 1"=200', Dated: January 27, 1999, Figure: 2, and Prepared by: Milone & MacBroom, Inc.

2.2 Property Description – Action Area

The following is a legal description of the Action Area as illustrated on Figure 3:

thence running northeasterly 1,365 feet more or less along the northwesterly street line of Adelaide Street and along the extension of said street line to a point;

thence running South 45°-00'-00" East 2,035 feet more or less to a point, thence turning and running South 02°-00'-00" East 2,410 feet to a point, thence turning and running South 60°-00'-00" West 750 feet to a point, thence turning and running North 35°-00'-00" West 1,120 feet more or less, all along a portion of land of the State of Connecticut, to a point;

thence running southwesterly 555 feet more or less along land of the State of Connecticut and land now or formerly of Thames Shipyard & Repair Company, each in part, to a point;

thence running southeasterly 190 feet more or less along the southwesterly street line of Ferry Street to a point;

thence running southwesterly along the extension of the southeasterly street line of Governor Winthrop Boulevard to the point of beginning.

Being more particularly bounded and described on a map entitled: "Project Boundary Map, State Pier Municipal Development Plan, New London, Connecticut," Scale: 1"=200', Dated: January 27, 1999, Figure: 2, and Prepared by: Milone & MacBroom, Inc.

2.2 Property Description – Action Area

The following is a legal description of the Action Area as illustrated on Figure 3:

State Pier Action Area, 376,720 square feet, 8.648 acres

Beginning at a point on the northerly streetline of State Pier Road (State Road 437) at the division line between land now or formerly of the State of Connecticut and the parcel herein described;

thence running North 07°-15'-03" West 46.00 feet along land now or formerly of the State of Connecticut to a point;

thence running along a clockwise curve having a radius of 5,654.65 feet, 658 feet more or less along land now or formerly of Amtrak and land now or formerly of the State of Connecticut, each in part, to a point;

thence running southeasterly 307 feet more or less along the Thames River to a point;

thence running South 83°-27'-03" West 212 feet more or less to a point, thence turning and running South 27°-43'-05" West 490.08 feet to a point, thence turning and running South 27°-57'-31" West 220.25 feet to a point, thence turning and running North 71°-46'-19" West 39.93 feet to a point, thence turning and running South 84°-00'-42" West 49.27 feet to a point, thence turning and running South 56°-52'-53" West 59.76 feet to a point, thence turning and running along a clockwise curve, having a radius of 475.00 feet, 211.59 feet to a point, thence turning and running North 07°-35'-57" West 432.19 feet, all along land now or formerly of the State of Connecticut, to a point;

thence running North 83°-18'-14" East 50.03 feet to a point, thence turning and running North 06°-49'-30" West 89.89 feet to a point, thence turning and running South 82°-04'-31" West 49.13 feet, all along the streetline of State Pier Road to the point of beginning.

State Pier Action Area, 376,720 square feet, 8.648 acres

Beginning at a point on the northerly streetline of State Pier Road (State Road 437) at the division line between land now or formerly of the State of Connecticut and the parcel herein described;

thence running North 07°-15'-03" West 46.00 feet along land now or formerly of the State of Connecticut to a point;

thence running along a clockwise curve having a radius of 5,654.65 feet, 658 feet more or less along land now or formerly of Amtrak and land now or formerly of the State of Connecticut, each in part, to a point;

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It should be noted that the internal boundaries of the parcels within the Actin Area will be required to be surveyed to an A-2 accuracy and will be performed after the MDP is adopted and prior to its initiation of property acquisition.

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3.0 EXISTING CONDITIONS

3.1 Existing Land Use and Zoning

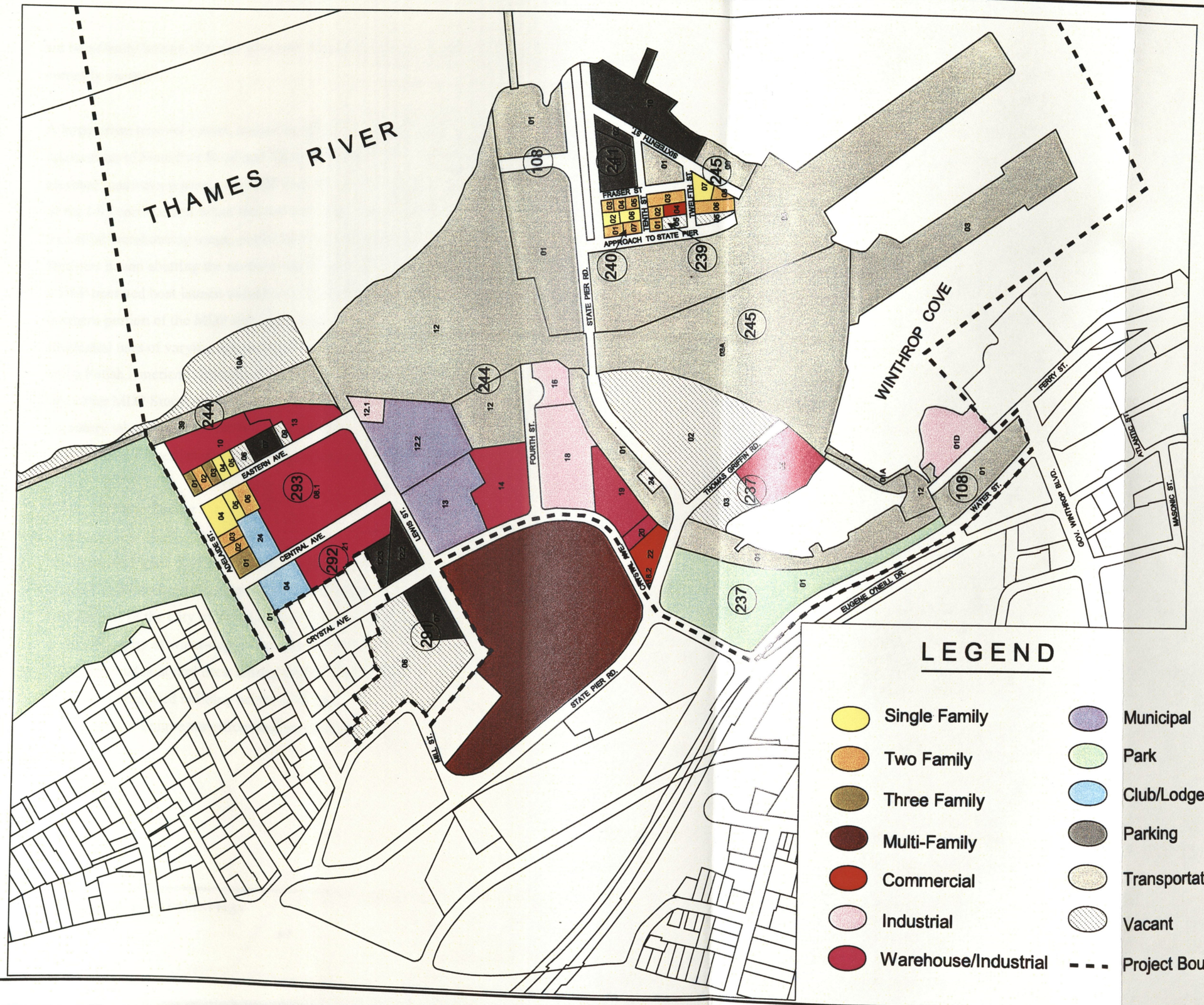
3.1.1 Existing Land Use

As depicted on Figure 4, "Existing Land Use," the core of the Project Area is predominately industrial in nature with a clear dependency on port and rail access. The majority of the land area in the southern and eastern portions of the MDP area is owned by either New England Central or Canadian National railroads and contains tracks accessing the State Pier, the Canadian National Pier, connecting to Amtrak's main line or contains siding tracks.

Until recently, State Pier and the surrounding parcels along Sixteenth Street and the eastern portions of Twelfth and Tenth Streets were under federal ownership and used by the Department of the Navy. These parcels have since been transferred to the State of Connecticut Department of Transportation and constitute one of Connecticut's three deep-water ports.

Fox Navigation presently leases a portion of the waterfront just north of the State Pier and operates a high-speed ferry service. Currently, with the exception of the ferry staging area, most of the land area east of the Sixteenth Street right-of-way is used for ferry-related parking.

Out of character with its current surroundings is a small pocket of residences. These residences, most of which were built in the 1890's, were passed over as part of previous Urban Renewal property acquisition activities. There are 14 residential structures on the parcels bound by or located along the approach to State Pier on the west, State Pier Road on the north, Fraser Street on the east, and Twelfth Street on the south. According to assessor records, three of these structures are single-family homes; ten of these structures



In association with:
HMA
Harrall-Michalowski Associates
Planning Consultants
Hamden, CT

EXISTING LAND USE

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

Engineering, Landscape Architecture and Environmental Science
Milone & MacBroom
716 South Main Street
Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

Designed	Drawn	Checked

SCALE 1" = 400'

DATE JANUARY 21, 1999

PROJECT NO. 1876-02-1

FIG. 4

are two-family homes, and one structure was converted to commercial usage but is currently vacant.

A large urban renewal parcel, owned by the City of New London, is located at the intersection of State Pier Road and Thomas Griffin Road. The location of rail lines and elevated roadways separate the MDP area into distinct regions. As a result of the creation of the I-95 corridor and urban renewal activities in the 1970's, there are pockets of light industrial/warehousing usage, public housing and municipal public works related facilities in and abutting the northern and western portion of the MDP area. There is also a DEP operated boat launch under the interstate/bridge right-of-way. In the extreme northern portion of the MDP area, just south of Riverside Park, is a small enclave of residential uses of varying age and type and two lodges/fraternal clubs -- a Moose Lodge and a Polish American Veterans Auxiliary Club. Included as Appendix A is Table 1, State Pier MDP Study Area Property Characteristics, providing a parcel by parcel inventory taken from City of New London tax records. Table 2 is a list of characteristics of residential properties within the Project Area.

3.1.2 Existing Zoning

As shown in Figure 5, "Existing and Proposed Zoning Map," the Action Area is located in a WCI - Waterfront Commercial Industrial Zone and District as defined in the Zoning Regulations of the City of New London. The regulations applicable to a WCI Zone permit a variety of water-dependent uses and port facilities, manufacturing, railroad operation, and boatyard uses, among others. The allowed lot coverage is 50% and the maximum permitted building height is 45 feet. The WCI Zone was created in 1983 in recognition of unique waterfront and port district development requirements.

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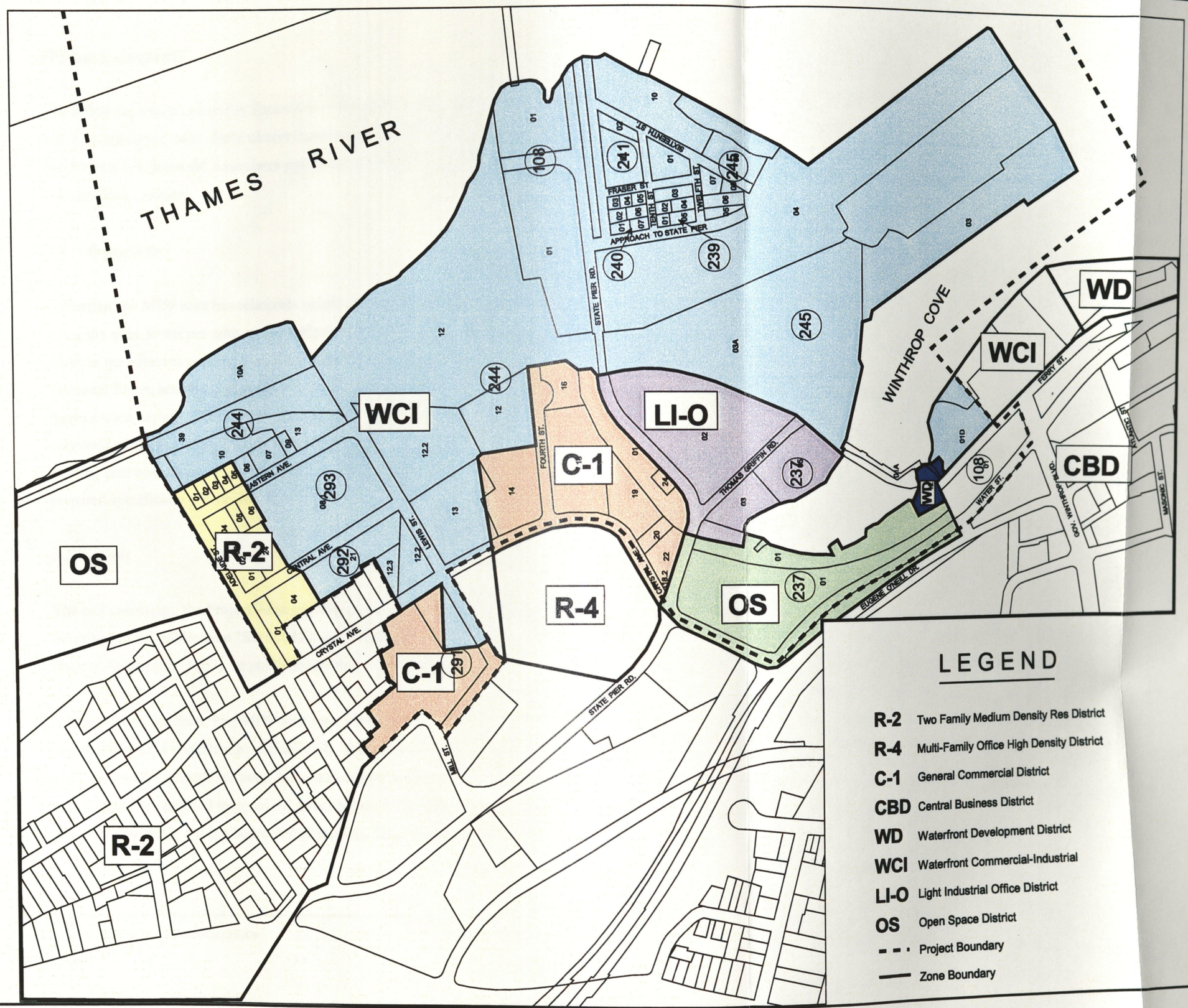

In association with:
HMA
Harrall-Michalowski Associates
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Hamden, CT

EXISTING AND PROPOSED ZONING

STATE PIER MUNICIPAL DEVELOPMENT PLAN NEW LONDON, CONNECTICUT

Milone & MacBroom
Engineering, Landscape Architecture and Environmental Science
716 South Main Street
Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

Designed	Drawn	Checked
SCALE 1" = 400'		
DATE JANUARY 21, 1999		
PROJECT NO. 1876-02-1		

FIG. 5

3.2 Physical Environment

The following section provides discussion of the physical characteristics of the MDP area based on published data. Field observations were made by Milone & MacBroom, Inc. and Harrall-Michalowski Associates personnel to ascertain the condition of streets and infrastructure systems.

3.2.1 Topography

Generally, the MDP area has relatively gentle slopes. The shoreline edge of the property along the quay is steeper with an approximated 15-foot rise in elevation from the Thames River to the adjacent parking area. The residential area bounded by State Pier Road, Sixteenth Street, and the access drive to the pier lies on a bluff overlooking the port and New London harbor. The steep topography between the Action Area and the State Pier may need to be altered by a future developer in order to integrate the property into existing port operations. Figure 6, "Topography and Soil Boring Location Map," was prepared specifically for this MDP.

3.2.2 Soils

The soil underlying the Project Area and the surrounding vicinity have been mapped and described in the publication "Surficial Geology of the New London Quadrangle" by Richard Goldsmith (1962), as published by the U.S. Geological Survey.

The portion of the State Pier MDP area west of the rail right-of-ways as well as the residential area is underlain by a glacial till. It consists of compact sandy and gravelly till with a relatively smooth surface. Also included are a few thin masses of loose till and small lenses of stratified material. A small pocket in the northwestern corner of the MDP area is identified as having bedrock outcropping. The remaining portions of the MDP

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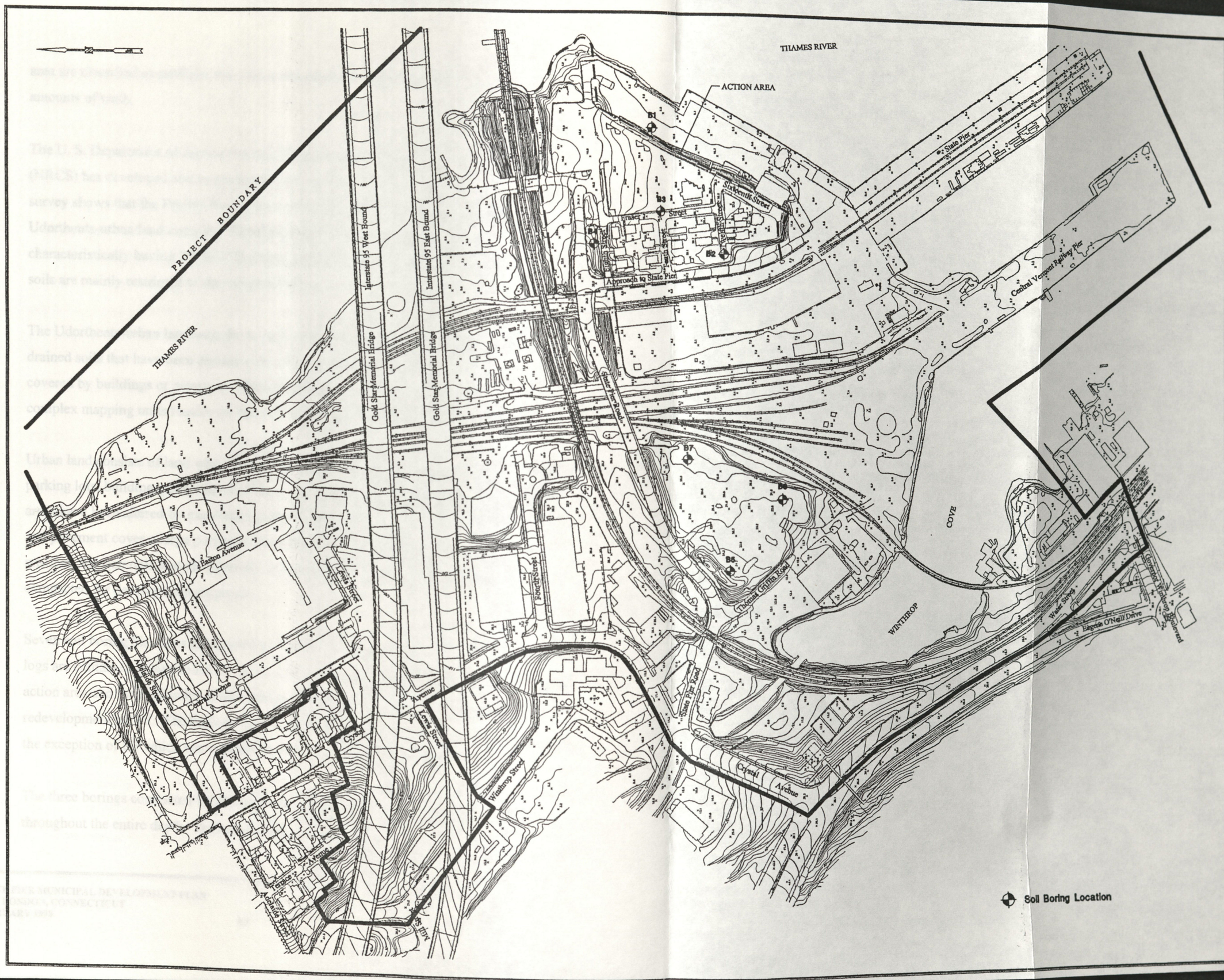

TOPOGRAPHY AND SOIL BORING LOCATION MAP

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

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HMA
Harrall Michalowski Associates

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SCALE	1" = 300'	
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DWG NAME	NL-BORING.DWG	

FIG. 6

PROJECT BOUNDARY
SWITCH YARD

area are classified as artificial fill. These are generally earth fill and contain little or no amounts of trash.

The U. S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) has developed soil mapping of New London County, Connecticut. The soil survey shows that the Project Area is underlain predominantly by urban land and Udorthents-urban land complex. Small pockets of Hinckley gravelly sandy loam, characteristically having 3% to 15% slopes remain in the MDP area. These Hinckley soils are mainly restricted to the residential area.

The Udorthents-urban land complex consists of excessively drained to moderately well drained soils that have been disturbed by cutting or filling, and areas that have been covered by buildings or pavement. Both the urban land and the Udorthents-urban land complex mapping units require on-site soil investigation and evaluation for most uses.

Urban land consists of land where more than 85% of the surface is covered by streets, parking lots, buildings, and other structures. Most of the original soils underlying these areas have been altered by excavating or have been covered with fill material. Buildings and pavement cover a large portion of the area. The predominant soils present consist of artificial fill materials that are generally of low erodibility and have been previously compacted for development purposes.

Seven soil boring locations as depicted in Figure 6 were selected for the project. (Boring logs are contained in Appendix F.) Borings B1 to B4 were conducted in or near the action area and the remainder of the borings were conducted on an adjacent redevelopment parcel. The borings were performed on December 29 and 30, 1998, with the exception of B3 which was not drilled due to an overhead utility conflict.

The three borings conducted for the action area generally show soft sandy gravel subsoil throughout the entire depth. Borings B-3 and B-4 show a shallow fill area from the

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surface which extends to depths of 1.5 feet to 6.5 feet. In addition, boring B-1 encountered water at 8 feet and an unknown source of diesel fuel at 12 feet. It is not anticipated that any development within the Action Area will cause disturbance of material to a depth where the diesel contamination was encountered.

The borings conducted on the redevelopment property show sand and rubble fill beginning at the surface and extending to depths of 5.5 feet to 10.5 feet. The remainder of the subsoil is firm gravel with traces of organic soil. All three borings encountered refusal at a depth ranging from 13 feet to 16 feet. A 5-foot rock coring was taken at a depth of 13 feet for boring location B-5. The coring produced a granite type of rock with a mixture of other rock formations.

3.2.3 Flood Hazard

The Project Area is located along the west bank of the Thames River, approximately 3.5 miles upstream of Long Island Sound. The Thames River has a watershed area of 1,473 square miles, consisting of rural woodlands, farmland, and moderately developed areas in eastern Connecticut. The river has a length of only 15 miles to Norwich, which is both the head of tide water and the confluence of three major tributaries: the Yantic, Quinnibaug, and Shetucket Rivers. River estuaries can be subject to two types of flooding: riverine runoff and coastal storm surges that raise tide levels along the shore to create wave run-up.

Portions of State Pier and the surrounding areas contain flood hazard areas as delineated by the Federal Emergency Management Agency (FEMA) Flood Insurance Maps. These are shown graphically in Figure 7.

Both 100-year V-zones and A-zones are located within the project boundary. The hazard zone designated as zone V represent those highly exposed areas subject to flooding, caused by the combination of coastal waves superimposed upon the 100-year frequency stillwater coastal flood level. Zone A hazard areas are subject to the 100-year storm

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FLOOD HAZARD AREAS

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

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MILONE & MACBROOM

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PROJECT NO. 1576-02-1		
DWG NAME NL-SAN.DWG		

FIG. 7

event caused by the Thames River flooding which, in this case, is the backwater area of the coastal floodway on Long Island Sound. Any reuse proposed for these areas must include plans for flood-proofing of structures within these zones.

Small areas of Zone B, those areas subject to the 500-year frequency event, are also located in the Project Area. All other areas are designated as Zone C, which are areas of minimal flood hazard. Table 1 gives a brief explanation of the FEMA map zone designations pertinent to the Project Area.

TABLE 1
Flood Zone Designations

Zone	*Explanation*
A1 - A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
B	Areas between the limits of the 100-year and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
V1 – V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.

Source: FEMA Flood Insurance Rate Map, City of New London, Aug. 19, 1985
Note: "Base Flood" means the flood having a 1% chance of being equaled or exceeded in any given year.

The floodplain of the 100-year storm event extends into a large portion of the study area, but is generally limited to the New England Central Railway and areas east of the railroad.

State Pier Road, which serves as the main access to the site, is almost entirely outside of the mapped floodplain. An area of potential flooding lies between Crystal Avenue and the Amtrak railway overpass. This area is designated as Zone B, which may be subject to low frequency flooding. Other areas of the road that appear to be in the floodplain boundary are bridges. These structures, however, are elevated well above the base flood elevation. Hence, the floodplain designation is only applicable to the railroad area beneath the overpasses.

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The 5.6-acre residential area and its associated roads are designated as Zone C, which will be subject to only minimal flooding. The majority of the parking areas nearby, utilized by the DOT office building and Fox Navigation, are also mapped in Zone C. The DEP boat launch area and a small portion of the Fox Navigation parking lot are mapped in the A7 Zone. The A7 Zone delineates those areas within the 100-year floodplain. In addition, both piers and the nearby warehouses are included in an A7 Zone. There is also a small pocket just north of the State Pier that is designated as Zone B.

The portion of the study area north of the Gold Star Bridge is relatively unaffected by the 100-year floodplain. The only lands where there is potential for flooding in this section of the MDP area are the railroad, designated as Zone B, and undeveloped land east of the railroad designated as Zone A7. All roadways in this area are outside of the mapped floodplain.

Since a portion of the Project Area is within a regulated floodplain, a Flood Management Certificate will be required pursuant to Section 25-68b et. seq. of the Connecticut General Statutes. Note, however, that none of the Action Area lies within the flood hazard boundary aside from a portion of Winthrop Point at the northeast extremity of the area. Receipt of a Flood Management Certificate is likely to be successful.

3.3 Public Utilities and Services

The following discussion outlines the status and availability of utility service to the MDP area. Constraints and inadequacies are also described.

3.3.1 Water

The City of New London has operated its own water supply system since 1873 in accordance with an Enabling Act of the General Assembly dated June 5, 1871. On March 28, 1997, the operation of the water supply system was transferred to the Professional Service Group, taking charge of all administrative power except for capital

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projects. Professional Service Group provides public water service within City boundaries, as well as to portions of the Town of Waterford and the Town of Montville.

Source of Supply

New London utilizes surface water sources for its supply system. These consist of four active reservoirs: Lake Konomoc, Fairy Lake, Barnes Reservoir, and Bogue Brook Reservoir, located in neighboring Towns Montville and Waterford.

Additional supply sources include the Beckwith Pond Reservoir and the Great Swamp Diversion. An emergency source, Brandagee Lake, owned by the Water and Water Pollution Control Authority (WWPCA), is located at the northern border of New London. An additional emergency source, although restricted and not used, is the small pond known as Bond Reservoir, located immediately north of Fairy Lake.

Although the safe yield of the water system meets the current average demands, a water deficit is projected for the 50-year planning period. New London's water supply is projected to fall below the desired margin of safety by the year 2012, and it is projected that the existing safe yield will be exceeded by the year 2030. Even using more conservative population projections, it is anticipated that the margin of safety will be inadequate by the year 2040.

To address the forecasted deficiencies, the City is presently exploring several alternatives. Implementation of various combinations of the options under discussion would increase safe yield to acceptable levels, with an adequate margin of safety.

Distribution System

The New London Plan of Development and the City's Water Supply Plan indicate that the distribution system storage capacity is adequate for the existing and future demands. The Plan of Development further indicates that the Waterford distribution piping is relatively new and in good condition. The New London distribution system, particularly in the southern half of the City, was constructed in the early 1900's and is in need of substantial

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repairs. The system has numerous areas of fire flow deficiencies, reduced pipe capacities, undersized mains and low pressure areas.

Fire flow deficiencies are gradually being addressed through the City's main replacement program. Minor repairs and maintenance have been performed to water supply source dams in response to orders issued by the Department of Environmental Protection. Plans also include installation of the additional instrumentation necessary to assure compliance with the 1997 Safe Drinking Water Act. Additionally, a comprehensive metering program, intended to assist in the recovery of lost revenues, is underway to replace all customer meters within eight years.

Remaining deficiencies are addressed in the short-term and long-term capital improvement plans. Two programs are outlined in the capital plan: one for projects specific to the New London distribution system, and the second for overall, joint system improvements.

In the Project Area, water is supplied through a series of water mains located in the surrounding streets. Table 2 lists the streets in the Project Area and the size of the existing service mains. Pipe sizes in the study area range from 6-inch to 12-inch diameters. The majority of the water mains, however, are 6-inch pipes.

TABLE 2
Water Service Mains for the State Pier MDP Area

Street Name	*Water Supply Mains*
Eighth Street	6" main
Tenth Street	6" main
Fraser Street	6" main
Twelfth Street	6" main
Sixteenth Street	6" main
Adelaide Street	6" main
Eastern Avenue	6" main
Central Avenue	6" main
Thomas Griffin Road	8" main
Fourth Street	6" main
Lewis Street	
from Eastern Ave. to Crystal Ave.	8" main
from Crystal Ave to Winthrop St.	6" main
Crystal Avenue	
from Adelaide St. to Lewis St.	6" main
from Lewis St. to State Pier Rd.	8" main, 10" main
from State Pier Rd. to Eugene O'Neill Dr.	16" main
Eugene O'Neill Drive	16" main
State Pier Road	12" main – under construction
Winthrop Street	6" main, 8" main

Source: Professional Services Group Water Department

Fire protection is provided through a series of hydrants located throughout the Project Area. A total of 34 hydrants are known to exist in the vicinity. Table 3 lists these hydrants and their approximate locations.

TABLE 2
Water Service Mains for the State Pier MDP Area

Street Name	Water Supply Mains
Eighth Street	6" main
Tenth Street	6" main
Fraser Street	6" main
Twelfth Street	6" main
Seventh Street	6" main
Adelaide Street	6" main
Eastern Avenue	6" main
Central Avenue	6" main
Thomas Griffin Road	8" main
Fourth Street	6" main
Lewis Street	
from Eastern Ave. to Crystal Ave.	8" main
from Crystal Ave to Winthrop St.	6" main
Crystal Avenue	
from Adelaide St. to Lewis St.	6" main
from Lewis St to State Pier Rd.	8" main, 10" main
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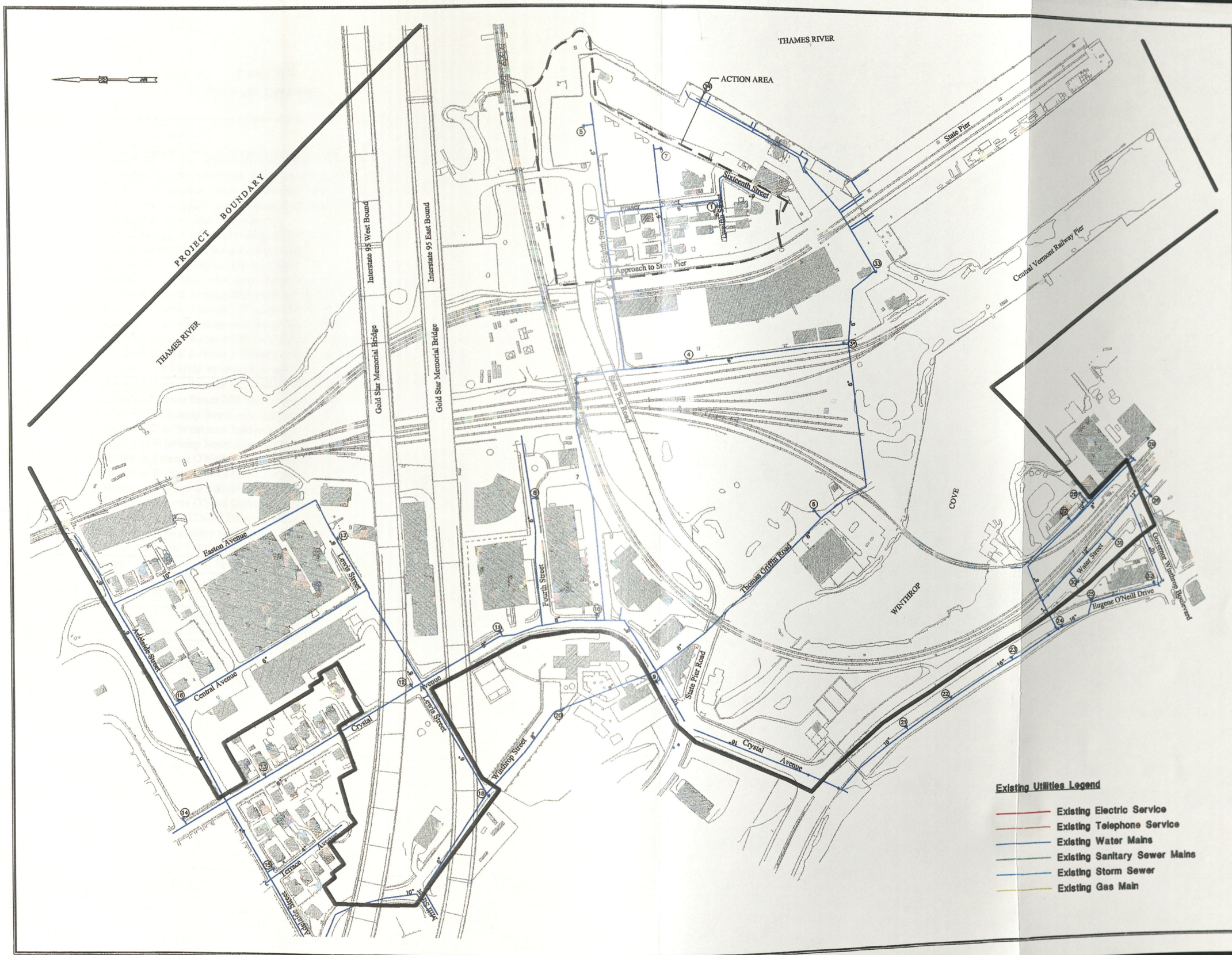

In Association with:
HMA
Harrall Michalowski Associates
Planning Consultants
Hamden, CT

EXISTING WATER MAINS

STATE PIER
MUNICIPAL DEVELOPMENT
NEW LONDON, CONNECTICUT

Milone & MacBroom
Registered Landscape Architecture and Professional Engineers
38 South Main Street
Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

—	JFK	VCM
DESIGNED	DRAWN	CHECKED

SCALE 1" = 300'

DATE JANUARY 21, 1999

PROJECT NO. 1876-02-1

DWG NAME NL-WATER.DWG

FIG. 8

SHEET NO.

TABLE 3
Hydrant Locations

Hydrant Reference	*Location*
1	North side of Twelfth Street near intersection with Fraser Street
2	North side of Eighth Street near intersection with Fraser Street
3	Along former Congdon Street 700' south of State Pier Road
4	Along former Congdon Street 250' south of State Pier Road
5	Along Eighth Street near in parking lot
6	End of Thomas Griffin Road near sanitary pump station #5
7	In parking lot near Fox Navigation building
8	South side of Fourth Street near cul-de-sac
9	West side of Crystal Avenue near intersection with State Pier Road
10	East side of Crystal Avenue 200' south of Fourth Street
11	East side of Crystal Avenue 100' north of Fourth Street
12	East side of Crystal Avenue near intersection with Lewis Street
13*	East side of Crystal Avenue 150' south of intersection with Adelaide Street
14*	East side of Crystal Avenue 150' north of intersection with Adelaide Street
15*	South side of Adelaide Street near intersection with Terrace Avenue
16	East side of Central Avenue near intersection with Adelaide Street
17	South side of Lewis Street 200' east of intersection with Central Avenue
18	West side of Winthrop Street near intersection with Lewis Street
19	East side of Cole Street near intersection with Adelaide Street
20*	West side of Winthrop Street near apartment building
21*	West side of Eugene O'Neill Drive 300' south of intersection with Crystal Avenue
22*	West side of Eugene O'Neill Drive 500' south of intersection with Crystal Avenue
23*	West side of Eugene O'Neill Drive 750' south of intersection with Crystal Avenue
24*	West side of Eugene O'Neill Drive 1000' south of intersection with Crystal Avenue
25*	East side of Eugene O'Neill Drive 1100' south of intersection with Crystal Avenue
26*	West side of Water Street near intersection with Gov. Winthrop Boulevard
27	East side of former Ferry Street near Yankee Gas facility
28	East side of former Ferry Street near Yankee Gas facility
29*	East side of former Ferry Street near intersection with Gov. Winthrop Boulevard
30	West side of Water Street 300' north of intersection with Gov. Winthrop Boulevard
31	West side of Water Street 100' north of intersection with Gov. Winthrop Boulevard
32*	East side of Eugene O'Neill Drive near intersection with Gov. Winthrop Boulevard
33	Near the State Pier
34	At dock near Fox Navigation parking lot

*Near but outside the State Pier MDP area border.

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11	East side of Crystal Avenue 100' north of Fourth Street
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14*	East side of Crystal Avenue 150' north of intersection with Adelaide Street
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16	East side of Central Avenue near intersection with Adelaide Street
17	South side of Lewis Street 200' east of intersection with Central Avenue
18	West side of Winthrop Street near intersection with Lewis Street
19	East side of Cole Street near intersection with Adelaide Street
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33	Near the State Pier
34	At dock near Fox Navigation parking lot

*Near but outside the State Pier MDP area border.

The Insurance Services Organization (ISO) provides target fire flows between 750 and 1,000 gallons per minute (gpm) for residential areas, and between 1,500 and 3,500 gpm for commercial areas. Based on the available hydrant testing in the Project Area, available fire flows may be inadequate for some uses. Uses that require significant fire suppression systems or other high pressure systems may need to have internal storage and pump systems. Other, less water-intensive uses should find the existing to be sufficient. Table 4 lists available flow and pressure data for the Project Area.

TABLE 4
Hydrant Flow Testing

Hydrant Reference	*Hydrant Flow Data*			
	Pressure (PSI)		*Flow (GPM)*	
	Static	*Residual*	*Flow*	*Flow @ 20 psi*
3	102	68	740	1200
17	87	60	920	1500

3.3.2 Sanitary Sewer

The City of New London has managed a sewer network since approximately 1890 and a sewer plant since 1929. As of March 28, 1997, water and sewer operations were transferred to the Professional Service Group, excluding capital projects. The regional water pollution control facility (WPCF) is located at 100 Trumbull Street in the State Pier MDP Area. This facility serves the needs of a large percentage of the City of New London, as well as areas in the Towns of Waterford, East Lyme, and Montville. The facility also treats septic wastes delivered to the facility by way of septic hauling tank trucks from the Towns of Waterford, East Lyme, and Montville.

New London has recently approved a major sewer system rehabilitation project for the southern half of the City. This $12 million project is designed to prevent rain and ground water from entering the sewer system and involves the repair, replacement and rehabilitation of gravity sewer lines, force mains, and pump stations to avoid overflows into the Thames River, Long Island Sound, and Alewife Cove.

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Several improvements to the water pollution control facility will be evaluated. These include identification of anticipated flows and loadings to the facility over the next 10 years as well as capacity and nitrification/denitrification options for within the existing aeration basins. Additional work is anticipated for the development and evaluation of several alternatives with respect to permit compliance, odor control, and visual enhancement and process upgrade to meet the goals of the municipal development strategy.

These improvements will bring the City into compliance with an order issued by the Connecticut Department of Environmental Protection. The order requires the City to eliminate overflow into the Thames River such as occurs in the State Pier MDP area.

The entire State Pier MDP area, with exception of the area west of Winthrop Cove, is located within the "sewershed" of the City of New London's Sanitary Pump Station #5. An extensive network of sanitary sewers ranging in size from six inches to 12 inches collects sewage flows from the Project Area. Table 5 lists the streets within the Project Area and the size of existing service mains.

The service network connects to two main trunk lines. The first trunk line is a 20-inch gravity sewer that conveys sewage to the pump station from the north and west. This line enters the MDP area from Cole Street, continues down Winthrop Street, and crosses Crystal Avenue. The line then crosses the Amtrak Railway and State Pier Road at the railroad overpass continuing along Thomas Griffin Road to the pump station. The second trunk line conveys sewage to the pump station from the north and east. This line enters the MDP area from the north as a 12-inch main located on the west side of New England Central Railway and, after crossing the railway at two manholes, it is increased to a 16-inch main. It continues southerly along the east side of New England Central Railway, then angles west just before Winthrop Cove, and extends across the railway yard to the pump station.

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TABLE 5
Sanitary Sewer Mains for the State Pier MDP Area

Street Name	*Sanitary Sewer Mains*
Eighth Street	8" main, 20" overflow
Tenth Street	6" main
Fraser Street	8" main
Twelfth Street	8" main
Sixteenth Street	8" main
Adelaide Street	None
Eastern Avenue	8" main
Central Avenue	8" main
Thomas Griffin Road	20" main
Fourth Street	8" main
Lewis Street	8" main
Winthrop Street	21" main
Crystal Avenue	
from Adelaide St. to 21" Trunk Line	10" main
from State Pier Rd. to 21" Trunk Line	12" main
Eugene O'Neill Drive	12" main
Water Street	18" main

Source: Professional Services Group Water Department

Effluent is primarily discharged from the pump station through a 16-inch force main in a southerly direction. The force main runs along the railway below grade to Winthrop Cove, where the force main surfaces and crosses the cove anchored to a railway bridge. The force main then continues, below grade, outside the MDP area near the Cross Sound Ferry facility.

A 20-inch gravity overflow pipe also discharges from the pump station in an easterly direction. This line parallels the gravity trunk line along the railway until it reaches an unimproved section of Eighth Street. The line then runs easterly along Eighth Street to an outfall point on the west side of the Thames River.

The analysis undertaken in preparation of this MDP reveals that there is sufficient sewer capacity to support the anticipated development in both the Action Area and the Project Area.

TABLE 5
Sanitary Sewer Mains for the State Pier MDP Area

Street Name	Sanitary Sewer Mains
Eighth Street	8" main, 20" overflow
Tenth Street	6" main
Fraser Street	8" main
Twelfth Street	8" main
Stevens Street	8" main
Adelaide Street	None
Eastern Avenue	8" main
Central Avenue	8" main
Thomas Griffin Road	20" main
Fourth Street	8" main
Lewis Street	8" main
Winthrop Street	21" main
Cogswell Avenue	
from Adelaide St. to 21" Trunk Line	10" main
from State Pier Rd. to 21" Trunk Line	12" main
Eugene O'Neill Drive	12" main
Water Street	18" main

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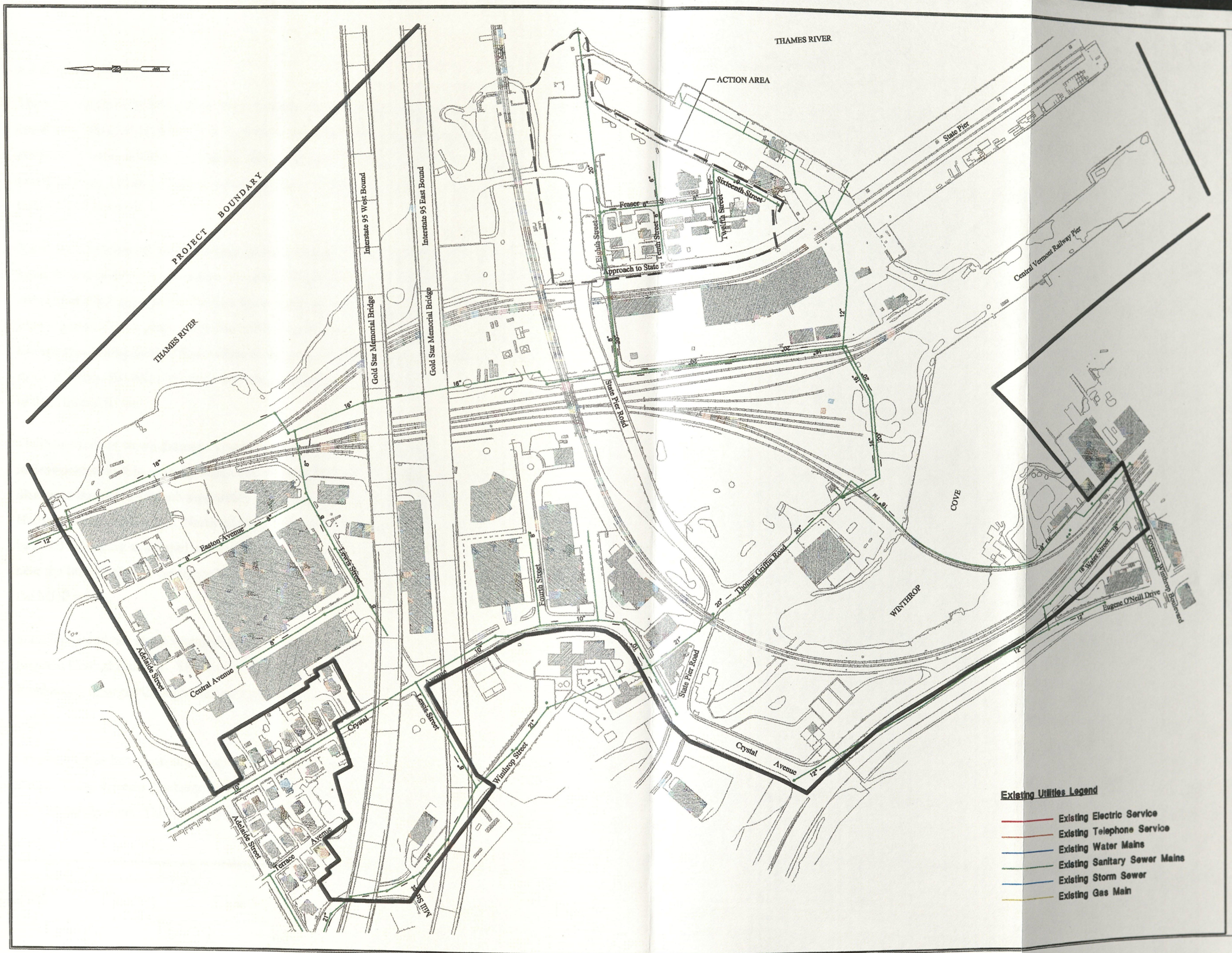

In Association with:
HMA
Hernall Michalowski Associates
Planning Consultants
Hamden, CT

EXISTING SANITARY SEWER MAINS

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

Engineering
Surveying Architecture
and Environmental Science
MILONE & MACBROOM
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Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

—	JFK	VCM
SCALE	1" = 300'	
DATE	JANUARY 21, 1999	
PROJECT NO.	1876-02-1	
DWG NAME	NL-SAN.DWG	

FIG. 9

3.3.3 Storm Sewer

The existing storm sewer system located within the Project Area is generally in fair condition. Most of the MDP area does not have storm drainage improvements, particularly west of and including the New England Central Railway. The streets with existing storm drainage improvements and their outfall locations are outlined in the following discussion.

There are a number of storm drainage outfalls located within the MDP area. All of these systems discharge, in some manner, to either Winthrop Cove or the Thames River. There are several discharges to the Thames River within close proximity to the State Pier. These systems are in place mainly to collect runoff from paved parking and outside storage areas associated with activities of the port. Outside of this area, there are also storm drainage facilities in Lewis Avenue and Eastern Avenue which discharge easterly to the Thames River.

There are several storm drainage systems which discharge to Winthrop Cove. Drainage improvements in Water Street which extend westerly out of the MDP area to the west discharge through a 48-inch pipe which outfalls to Winthrop Cove near the former Hallum Street intersection. North of this system on Water Street there are two catch basins discharging at a flared end section into the Cove. A small portion of Water Street near the intersection of Governor Winthrop Drive drains in a southerly direction out of the MDP area.

State Pier Road has storm drainage improvements between Crystal Avenue and the New England Central Railway. This system also picks up one catch basin on Thomas Griffin Road and discharges through a 24-inch pipe at an endwall on the east bank of Winthrop Cove.

Crystal Avenue has storm drainage improvements between Water Street and Lewis Street. These systems discharge to a box culvert under the intersection of State Pier Road and Crystal Avenue. This box culvert conveys tidal flows in Winthrop Cove under the

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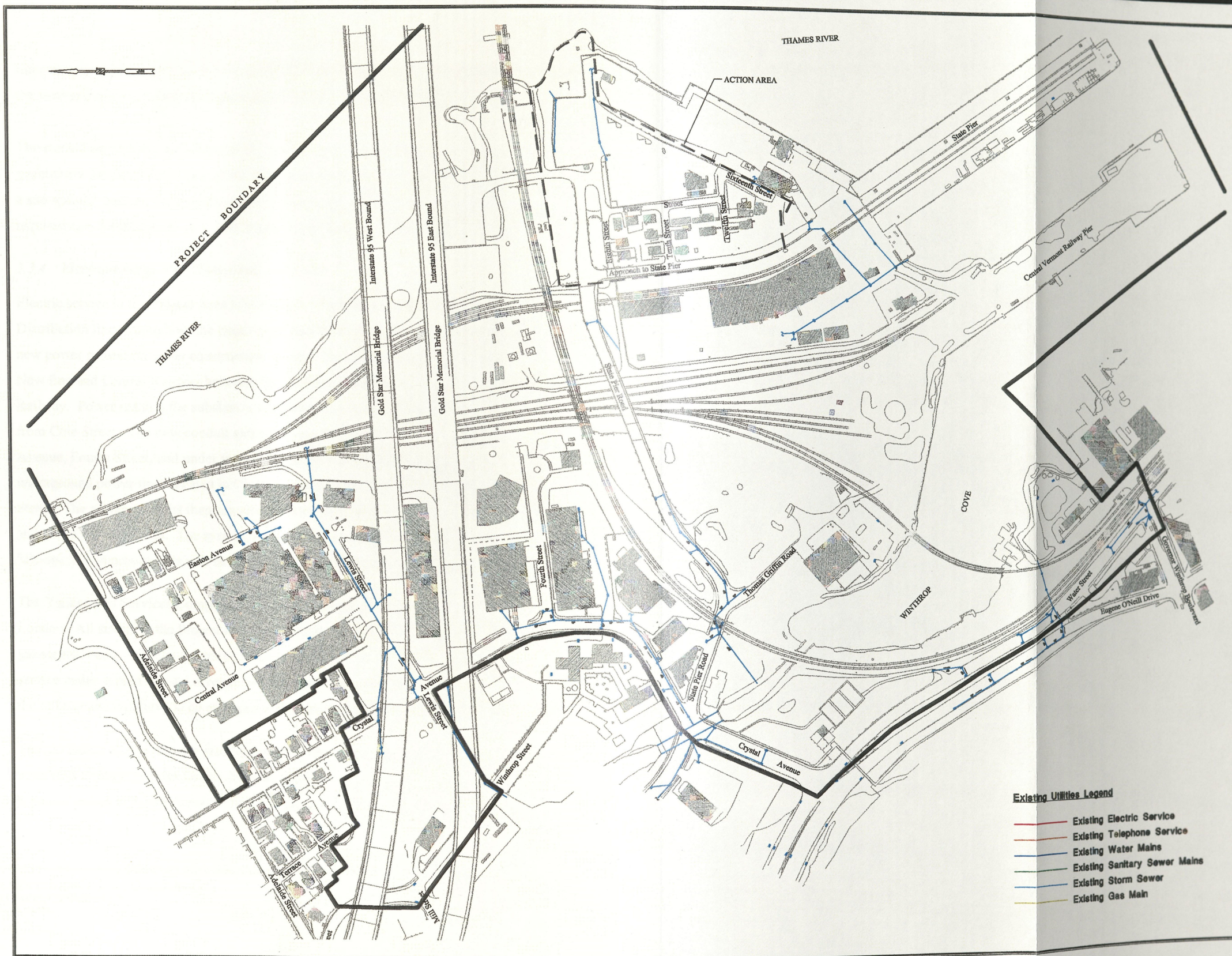

In Association with:
HMA
Hermil Michalowski Associates
Planning Consultants
Hamden, CT

EXISTING STORM SEWER

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

Engineering
Planning, Architecture
and Environmental Science

MILONE & MACBROOM

38 South Main Street
Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

—	JFK	VCM
SCALE	DRAWN	CHECKED

SCALE 1" = 300'

DATE JANUARY 21, 1999

PROJECT NO. 1876-02-1

DWG NAME NL-STORM.DWG

FIG. 10

SHEET NO.

intersection. Additionally, two minor storm drainage systems located in Cole Street and the west end of Lewis Street discharge to Winthrop Cove north of the box culvert.

The stormwater collection system for the Project Area is adequate to meet the quantitative needs of the Project Area. However, the system will have to be modified on a site-specific basis in order to comply with current Stormwater General Permit requirements for industrial sites with respect to the quality of stormwater discharges.

3.3.4 Electric/Energy, Gas, Telephone, and Cable

Electric service to the Project Area is provided by Connecticut Light & Power (CL&P). Distribution lines throughout the majority of the Project Area are overhead. There is a new power substation under construction on-site. The substation is located east of the New England Central Railway between the Gold Star Memorial Bridge and the Amtrak Railway. Power reaches the substation via underground conduits entering the MDP area from Cole Street. The new conduit extends along Winthrop Street, Lewis Street, Crystal Avenue, Fourth Street, and under the railway to the substation. There are also underground power lines located in Crystal Avenue, from State Pier Road to Water Street. The power conduits then run along Water Street to Governor Winthrop Boulevard and out of the MDP area. The system is adequate for uses permitted in the Project Area. Site-specific improvements will be required as part of the development project.

The Yankee Gas Services Company provides natural gas service to the City of New London. All streets in the Project Area west of the New England Central Railway have gas service mains with the exception of State Pier Road. State Pier Road has no gas service mains east of Crystal Avenue. Additionally, gas service is not available east of the railway and will have to be extended if this area is to be developed in the future.

The gas mains on site range in size from four to ten inches. An eight-inch high pressure main runs through Thomas Griffin Road and Crystal Avenue with a two-inch high pressure branch to Fourth Street. There are intermediate pressure mains in Water Street,

intersection. Additionally, two minor storm drainage systems located in Cole Street and the west end of Lewis Street discharge to Winthrop Cove north of the box culvert.

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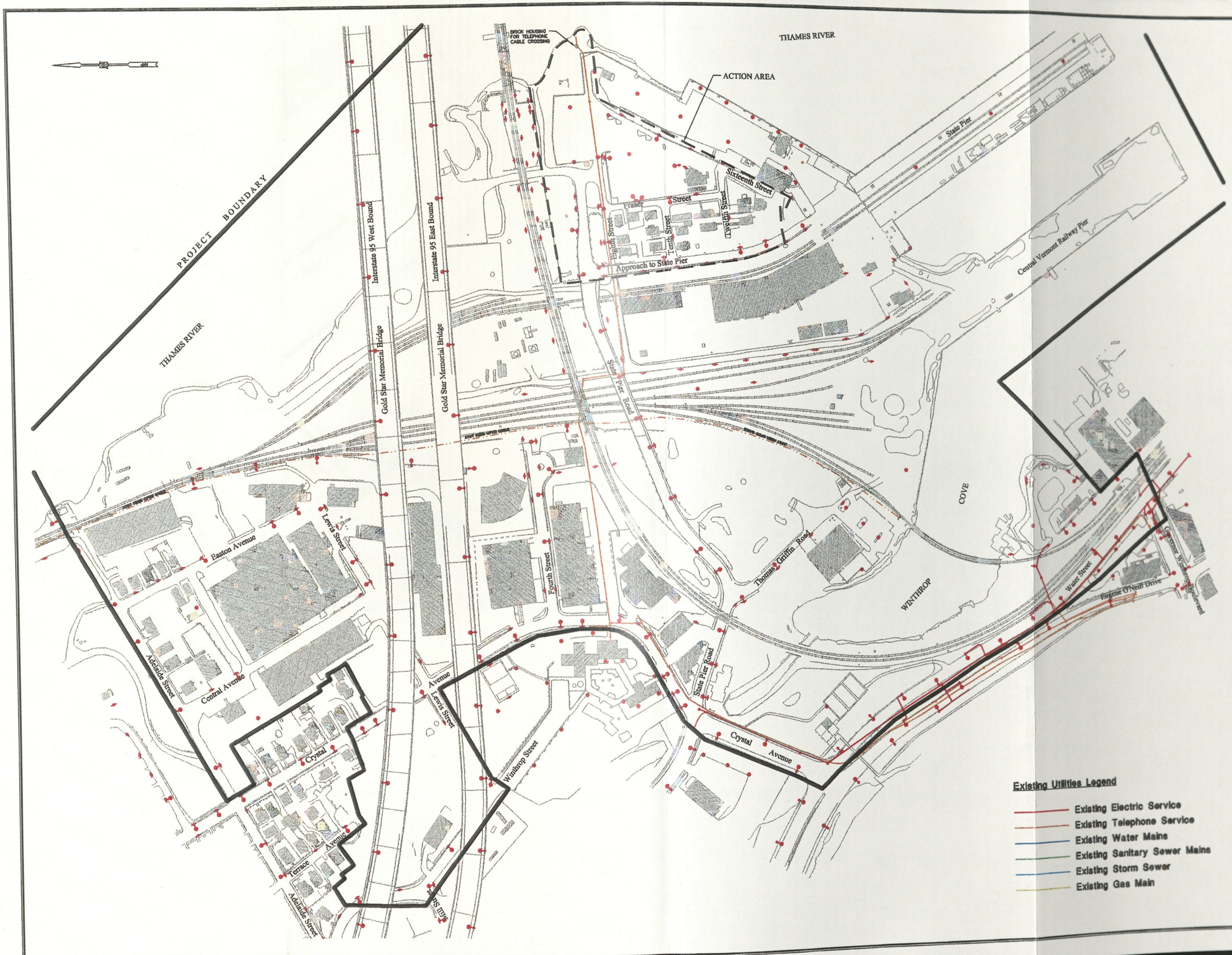


EXISTING ELECTRIC AND TELEPHONE SERVICE LINES

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

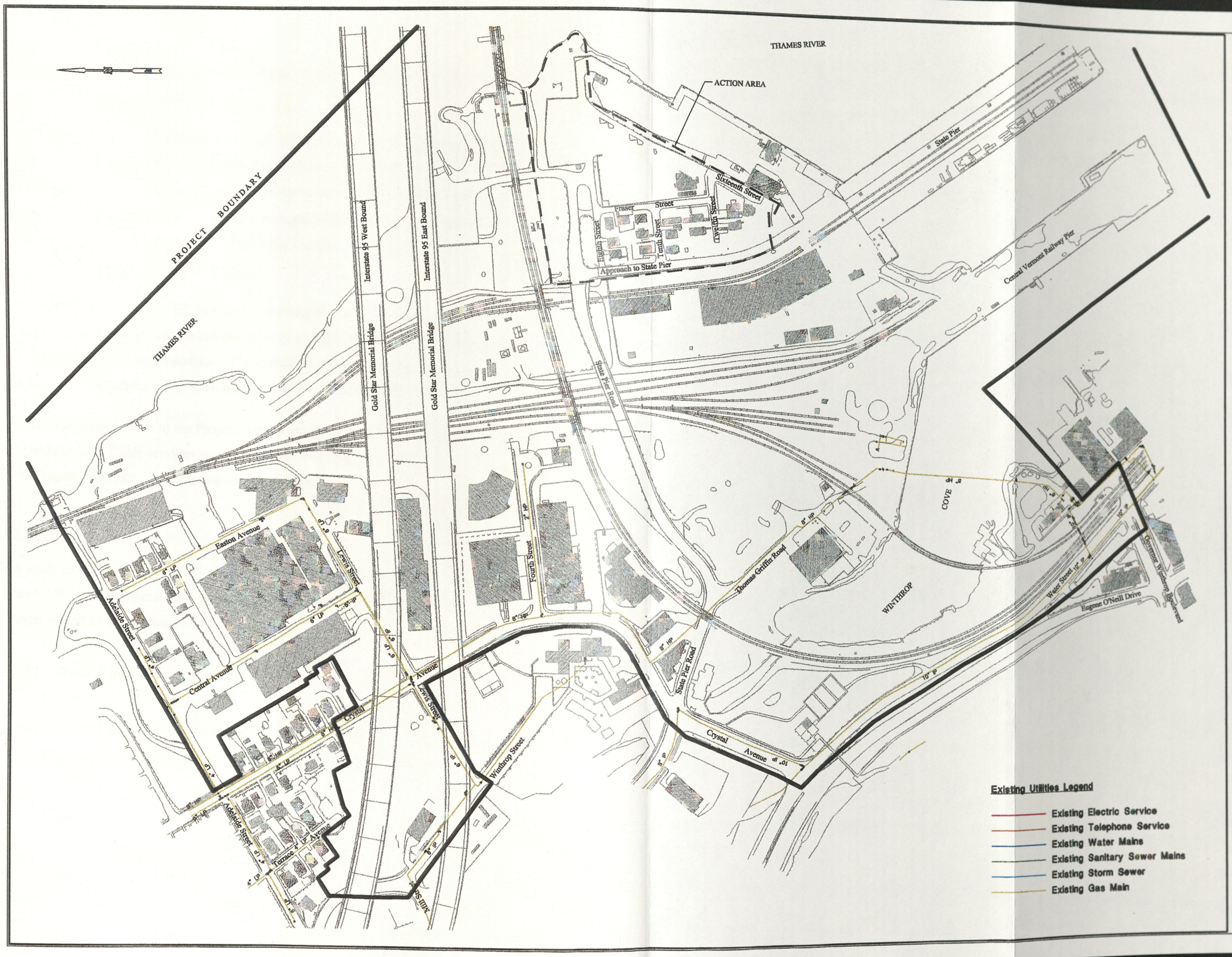
In Association with:
HMA
Harrell Michalowski Associates
Planning Consultants
Hamden, CT

Registered Landscape Architect and Land Surveyors
MILONE & MACBROOM
38 South Main Street
Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

— DESIGNED	JFK DRAWN	VCM CHECKED
SCALE 1" = 300'		
DATE JANUARY 21, 1999		
PROJECT NO. 1876-02-1		
DWG NAME NL-ETC.DWG		

FIG. 11

SHEET NO.



In Association with:
HMA
Hernall Michalowski Associates
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Hamden, CT

EXISTING GAS MAINS

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

Milone & MacBroom
Engineering, Environmental Planning and Environmental Science
38 South Main Street
Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

—	JFK	VCM
DRAWN	DRAWN	CHECKED

SCALE 1" = 300'

DATE JANUARY 21, 1999

PROJECT NO. 1876-02-1

DWG NAME NL-GAS.DWG

FIG. 12

SHEET NO.

Winthrop Street, and portions of Lewis Street, Crystal Avenue, and State Pier Road. All other mains are low pressure.

Telephone service to the Project Area is provided by Southern New England Telephone (SNET), AT&T, and MCI. AT&T maintains a buried intercontinental fiber optic line which runs generally along the west side of the New England Central Railroad. MCI maintains a buried fiber optic line which runs generally along the north and west side Amtrak railroad right-of-way. The fiber optic line may be "tapped" to support a particular use within the Project Area.

Communications services are provided to the majority of the Project Area by overhead service lines. The only streets known to have underground service lines are Water Street, Eighth Street, and Crystal Avenue. The conduits in Eighth Street connect to a brick building on site, where communications cables cross under the Thames River.

Cable television service to the Project Area is provided by Eastern Connecticut Cable Television Inc. Cable services are provided via overhead lines to all streets throughout the Project Area with the exception of Fourth Street.

3.4 Street System

A study of the street network within State Pier Project Area has been prepared as part of the MDP. For purposes of this study, field inspections were made and measurements taken as part of the evaluation of the network.

3.4.1 Roadway Network

State Pier Road provides direct access to the State Pier MDP area. Other roadways serving the area include Crystal Avenue, Williams Street, and Route 32.

Winthrop Street, and portions of Lewis Street, Crystal Avenue, and State Pier Road. All other mains are low pressure.

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3.4.1 Roadway Network

State Pier Road provides direct access to the State Pier MDP area. Other roadways serving the area include Crystal Avenue, Williams Street, and Route 32.

State Pier Road

The pavement width on State Pier Road is variable ranging from 33 to 42 feet. The posted speed limit is 25 miles per hour (mph). There are two existing railroad bridges that cross State Pier Road. The most westerly bridge has a vertical clearance of 14 feet-5 inches and a horizontal clearance of 38 feet. The second bridge is located at the northeastern end of the Project Area in the vicinity of the boat launch. The pavement is in good to excellent condition east of the railroad overpass. In the vicinity of the railroad overpass, the installation of a water main has left the pavement in a less desirable condition.

Crystal Avenue

Crystal Avenue is primarily a two-lane roadway with multi-lane segments at the intersections of State Pier Road and Route 32. The pavement is in good condition and its width varies between 33 and 51 feet. The speed limit on Crystal Avenue is 25 mph.

CT Route 32

CT Route 32 is a north-south roadway providing access between northern parts of the state and its terminus in New London. In the vicinity of Crystal Avenue, CT Route 32 provides a seven-lane cross section with striped shoulders and a raised island separating northbound (NB) and southbound (SB) traveling traffic.

Williams Street

Williams Street primarily provides two lanes of travel in the vicinity of State Pier Road. The pavement width is approximately 50 feet wide and the posted speed limit is 30 mph. The condition of the pavement is good.

The following is a detailed description of each studied intersection within the corridor.

State Pier Road

The pavement width on State Pier Road is variable ranging from 33 to 42 feet. The posted speed limit is 25 miles per hour (mph). There are two existing railroad bridges that cross State Pier Road. The most westerly bridge has a vertical clearance of 14 feet-5 inches and a horizontal clearance of 38 feet. The second bridge is located at the northeastern end of the Project Area in the vicinity of the boat launch. The pavement is in good to excellent condition east of the railroad overpass. In the vicinity of the railroad overpass, the installation of a water main has left the pavement in a less desirable condition.

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Williams Street

Williams Street primarily provides two lanes of travel in the vicinity of State Pier Road. The pavement width is approximately 50 feet wide and the posted speed limit is 30 mph. The condition of the pavement is good.

The following is a detailed description of each studied intersection within the corridor.

Williams Street (SR 635) at Huntington Street (SR 641) and Williams Street #1

This location operates under signal control. The pavement is striped to provide three lanes on each approach, including one lane leaving the intersection and two lanes approaching the intersection, and two lanes exiting SR 641 from the west. The signal currently operates under five phases, one of which provides an exclusive pedestrian phase.

Williams Street (SR 635) at State Pier Road

This intersection operates under stop sign control for motorists exiting State Pier Road. At the intersection of Williams Street, State Pier Road is striped to provide exclusive left and right turn lanes. State Pier Road, in the immediate vicinity of this intersection, supports pull-in parking to serve an adjacent shopping plaza.

State Pier Road at Crystal Avenue (SR 437)

This location operates under a three-phase traffic signal with an exclusive pedestrian phase. The northbound approach is striped to provide an exclusive left-turn lane and a shared through-right lane. There is no double yellow centerline for vehicles on Crystal Avenue north of State Pier Road and on-street parking was observed. The eastern leg of the intersection was disturbed by the installation of a water main, as noted during field inspection.

Crystal Avenue (SR 437) at CT Route 32 and Water Street

This intersection operates under signal control as well. The existing operation provides five phases, of which one is a sign clearance for the Flashing Stop Ahead sign on CT Route 32. Southbound CT Route 32 provides four lanes of travel, one of which is an exclusive left-turn lane into Crystal Avenue. Traveling northbound on CT Route 32, there are three lanes of travel with a raised median island

separating north and southbound traffic. Crystal Avenue, traveling westbound, provides exclusive left and right-turn lanes.

Crystal Avenue at Lewis Street

This unsignalized intersection operates under stop sign control for Lewis Street. No pavement markings are present to delineate traffic patterns. The New London Department of Public Works facility is located in the southeast quadrant of this intersection.

Crystal Avenue at Adelaide Street

This location operates under stop sign control for vehicles traveling on Adelaide Street. Pavement markings are either faded or non-existent. Existing signs at the intersection alert motorists of a school zone and to reduce their speed to 25 mph.

In addition to the roads providing access to the study area, there are a number of roadways that provide internal circulation. Internal roadways north of the Gold Star Memorial Bridge include Lewis Street, Adelaide Street, Central Avenue, and Eastern Avenue. Streets south of the bridge include Fourth Street, Thomas Griffin Road, Approach to State Pier, Fraser Street, Eighth Street, Tenth Street, Twelfth Street, and Sixteenth Street.

The following is a description of the roads north of the Gold Star Memorial Bridge.

Lewis Street

Lewis Street runs in an east-west orientation, entering the site from the west at its intersection with Crystal Avenue. The street then runs approximately 700 feet east where it terminates at an intersection with Eastern Avenue. The pavement width is 30 feet with granite curbing and concrete sidewalks on both sides of the

separating north and southbound traffic. Crystal Avenue, traveling westbound, provides exclusive left and right-turn lanes.

Crystal Avenue at Lewis Street

This unsignalized intersection operates under stop sign control for Lewis Street. No pavement markings are present to delineate traffic patterns. The New London Department of Public Works facility is located in the southeast quadrant of this intersection.

Crystal Avenue at Adelaide Street

This location operates under stop sign control for vehicles traveling on Adelaide Street. Pavement markings are either faded or non-existent. Existing signs at the intersection alert motorists of a school zone and to reduce their speed to 25 mph.

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The following is a description of the roads north of the Gold Star Memorial Bridge.

Lewis Street

Lewis Street runs in an east-west orientation, entering the site from the west at its intersection with Crystal Avenue. The street then runs approximately 700 feet east where it terminates at an intersection with Eastern Avenue. The pavement width is 30 feet with granite curbing and concrete sidewalks on both sides of the

street. The pavement is in good condition, however, cracking and pavement repair from utility work was observed.

Adelaide Street

Adelaide Street runs in an east-west orientation, and enters the site from the west beginning at Crystal Avenue. The street then runs approximately 700 feet east where it terminates at an intersection with Eastern Avenue. It appears that the right-of-way for Adelaide Street continues to the railroad but is generally impassable. The pavement width is 35 feet with granite curbing on the south side only. The pavement is in good condition with some cracking and pavement repair from sidewalk improvements. There is newly constructed concrete sidewalk on the south side only.

Central Avenue

Central Avenue runs in a north-south orientation between Adelaide Street and Lewis Street. The right-of-way extends approximately 350 feet south of Lewis Street, but the right-of-way is unimproved in this area. The pavement width on Central Avenue is 41 feet near the intersection with Adelaide Street, but varies extensively over its 700-foot length. The pavement is in poor condition due to extensive cracking and there are no sidewalks or curbs on either side of the street.

Eastern Avenue

Eastern Avenue runs in a north-south orientation between Adelaide and Lewis Streets. The avenue has a length of approximately 700 feet and a very steep uphill grade as it approaches Adelaide Street. The pavement is in good condition and has a width of 32 feet with granite curbing on the east side only. There is also a four-foot concrete sidewalk that meanders along the east side of the street.

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Adelaide Street

Adelaide Street runs in an east-west orientation, and enters the site from the west beginning at Crystal Avenue. The street then runs approximately 700 feet east where it terminates at an intersection with Eastern Avenue. It appears that the right-of-way for Adelaide Street continues to the railroad but is generally impassable. The pavement width is 35 feet with granite curbing on the south side only. The pavement is in good condition with some cracking and pavement repair from sidewalk improvements. There is newly constructed concrete sidewalk on the south side only.

Central Avenue

Central Avenue runs in a north-south orientation between Adelaide Street and Lewis Street. The right-of-way extends approximately 350 feet south of Lewis Street, but the right-of-way is unimproved in this area. The pavement width on Central Avenue is 41 feet near the intersection with Adelaide Street, but varies extensively over its 700-foot length. The pavement is in poor condition due to extensive cracking and there are no sidewalks or curbs on either side of the street.

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Eastern Avenue runs in a north-south orientation between Adelaide and Lewis Streets. The avenue has a length of approximately 700 feet and a very steep uphill grade as it approaches Adelaide Street. The pavement is in good condition and has a width of 32 feet with granite curbing on the east side only. There is also a four-foot concrete sidewalk that meanders along the east side of the street.

The following is a description of the roads south of the Gold Star Memorial Bridge.

Fourth Street

Fourth Street begins at Crystal Avenue, midway between State Pier Road and Lewis Street, and runs in an east-west orientation. The street has a total length of approximately 600 feet and terminates at an offset cul-de-sac near the railroad. The pavement width on Fourth Street is 34 feet with granite curbing and concrete sidewalks on both sides. The pavement condition is fair as a result of extensive cracking and pavement repair after utility work.

Thomas Griffin Road

Thomas Griffin Road begins at State Pier Road just east of the Amtrak overpass. The street has a length of approximately 500 feet and terminates at a parking lot near the railroad. The pavement width is 21 feet with concrete curbing on both sides. The pavement is in poor condition with extensive cracking and areas of broken pavement. A six-foot concrete sidewalk exists on the north side of the street.

Approach to State Pier

The Approach to State Pier runs in a north-south orientation and provides access to the State Pier from State Pier Road. The pavement width is 30 feet with granite curbing and a 4.5-foot wide concrete sidewalk on the west side only. The pavement is in excellent condition as a result of recent improvements.

Fraser Street

Fraser Street runs in a north-south orientation between Eighth and Twelfth Streets. The street has a length of approximately 350 feet with no curbing or

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Fourth Street

Fourth Street begins at Crystal Avenue, midway between State Pier Road and Lewis Street, and runs in an east-west orientation. The street has a total length of approximately 600 feet and terminates at an offset cul-de-sac near the railroad. The pavement width on Fourth Street is 34 feet with granite curbing and concrete sidewalks on both sides. The pavement condition is fair as a result of extensive cracking and pavement repair after utility work.

Thomas Griffin Road

Thomas Griffin Road begins at State Pier Road just east of the Amtrak overpass. The street has a length of approximately 500 feet and terminates at a parking lot near the railroad. The pavement width is 21 feet with concrete curbing on both sides. The pavement is in poor condition with extensive cracking and areas of broken pavement. A six-foot concrete sidewalk exists on the north side of the street.

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The Approach to State Pier runs in a north-south orientation and provides access to the State Pier from State Pier Road. The pavement width is 30 feet with granite curbing and a 4.5-foot wide concrete sidewalk on the west side only. The pavement is in excellent condition as a result of recent improvements.

Fraser Street

Fraser Street runs in a north-south orientation between Eighth and Twelfth Streets. The street has a length of approximately 350 feet with no curbing or

sidewalk on either side of the street. The pavement is in good condition and has a 21-foot width.

Eighth Street

Eight Street runs in an east-west orientation between the Approach to State Pier and a parking lot associated with pier operations. The western end passes under the Approach to State Pier at a newly improved bridge. The underpass has a 25-foot horizontal and an 18.5-foot vertical clearance. There are two short cut-off connections to State Pier Road near Fraser Street. The pavement width is 16 feet with no curbing or sidewalk. The pavement is in good condition.

Tenth Street

Tenth Street runs in an east-west orientation between the Approach to State Pier and Fraser Street. The right-of-way extends approximately 200 feet east of Fraser Street; however, the right-of-way is unimproved in this area. The pavement is in good condition. Pavement width extends 26 feet with no curbing or sidewalk on either side.

Twelfth Street

Twelfth Street runs in a east-west orientation between the Approach to State Pier and Sixteenth Street. Although the right-of-way intersects with the Approach to State Pier, the road improvements do not extend through the intersection. The pavement width is 21 feet with no curbing or sidewalk on either side. The pavement at this location is in good condition.

sidewalk on either side of the street. The pavement is in good condition and has a 21-foot width.

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Eight Street runs in an east-west orientation between the Approach to State Pier and a parking lot associated with pier operations. The western end passes under the Approach to State Pier at a newly improved bridge. The underpass has a 25-foot horizontal and an 18.5-foot vertical clearance. There are two short cut-off connections to State Pier Road near Fraser Street. The pavement width is 16 feet with no curbing or sidewalk. The pavement is in good condition.

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Twelfth Street runs in a east-west orientation between the Approach to State Pier and Sixteenth Street. Although the right-of-way intersects with the Approach to State Pier, the road improvements do not extend through the intersection. The pavement width is 21 feet with no curbing or sidewalk on either side. The pavement at this location is in good condition.

Sixteenth Street

Sixteenth Street extends in a southwesterly direction from the end of Twelfth Street to the State office building. The roadway terminates at a small parking area near the building. The right-of-way appears to extend northerly to Eighth Street through a fenced parking area. The pavement is in good condition with a width of 27 feet with concrete curbing on the east side.

3.4.2 Traffic Conditions

To determine the traffic impact of future development in the MDP area, existing traffic volumes were developed and projected to the year 2001, the year development is expected to be completed. These volumes, referred to as 'background' traffic, include a 2% per year peak hour growth factor for normal traffic growth and anticipated traffic associated with the Pfizer Global Development Facility.

Capacity analyses of the major intersections in the vicinity of the site were made. The results of these analyses indicated all intersections are considered "good," experiencing LOS C or better. However, the analysis of the background traffic conditions at the intersection of Williams Street and State Pier Road indicate that traffic turning left from State Pier Road onto Williams Street experiences long delays. This long delay is a result of the high through volumes on Williams Street. A summary and discussion of the Level of Service and intersections delays calculated for the intersections analyzed in this study can be found in Appendix B along with copies of the analysis worksheets.

3.5 Environmental Conditions

3.5.1 Environmental Evaluation

The Action Area is comprised of numerous residential properties, several vacant land parcels and two commercial properties, all of which are serviced by City water and sewer. The ground water and surface water in the MDP area have been previously classified as degraded (class GB and SC/SB), respectively. The majority of the properties have been residential since circa 1890. Two of the properties have been identified as having had commercial uses. Several parcels within the subject area may have potential contaminant sources. These sources were identified through site inspections, aerial photographs, Sanborn maps, and/or by site information interviews. The following list summarizes properties that may have potential contaminant sources:

- #34 12th Street (Parcel 11) appears to have operated as a laundromat from 1975 to 1990.
- During the site walk-over, an empty metal drum was observed on Parcel 13.
- #44 12th Street (Parcel 17) has had a garage structure circa 1951 to 1967 and a presumed automobile work shop circa 1907 to 1921 on the parcel. Also, a 375 gallon fuel oil UST was reported during the site inspection.
- To the east of Parcel 19, there are three unknown metal pipes adjacent to a former structure utilized by the Dahl Oil Co. Inc. and Valvoline Oil Co. These pipes are presumed to have been associated with the loading/unloading from the former oil terminal to the east.
- Presumed oily contaminated soil is being staged in a concrete block retaining structure on Parcel 20. Residual water with an oily sheen is emanating from the

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- During the site walk-over, an empty metal drum was observed on Parcel 13.

- #44 12th Street (Parcel 17) has had a garage structure circa 1951 to 1967 and a presumed automobile work shop circa 1907 to 1921 on the parcel. Also, a 275 gallon fuel oil UST was reported during the site inspection.

- To the east of Parcel 19, there are three unknown metal pipes adjacent to a former structure utilized by the Dahl Oil Co. Inc. and Valvoline Oil Co. These pipes are presumed to have been associated with the loading/unloading from the former oil terminal to the east.

- Presumed oily contaminated soil is being staged in a concrete block retaining structure on Parcel 20. Residual water with an oily sheen is emanating from the

staged material. Also, much of the northeast corner of Parcel 20 was filled with material from an unknown source.

3.5.2 *Recommendations*

Based on the information contained in this report, the background research and the visual site inspection, the following recommendations are presented at this time:

1. All thirteen (13) residential dwellings and the one (1) former commercial property (former Lee's Laundromat), with a construction date circa 1890, should be inspected for the possible presence of asbestos containing materials and lead paint. The laundromat should be inspected for evidence of former dry cleaning operations.

2. Proper removal and disposal of the metal drum on Parcel 13 should be performed. The surrounding/underlying soils should be inspected for evidence of contamination subsequent to removal.

3. Due to the fact that the UST located at 44 12th Street (Parcel 17) is most likely in excess of 25 years old and as the average life expectancy for unprotected steel underground steel tanks is typically 15 years, the UST should be removed and the surrounding/underlying soils should be inspected for evidence of oil contamination. Soil samples should be retrieved from the excavation bottom and sidewalls and be submitted for appropriate laboratory analysis to confirm/document the quality of site soils.

4. Soil sampling and analysis should be performed in the areas of the garage and automotive workshop formerly located on 44 12th street (Parcel 17).

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Based on the information contained in this report, the background research and the visual site inspection, the following recommendations are presented at this time:

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4. Soil sampling and analysis should be performed in the areas of the garage and automotive workshop formerly located on 44 12th street (Parcel 17).

5. Further investigation should be performed of the use/function of metal pipes located to the east of Parcel 19 and presumed to have been associated with the former adjacent oil terminal operation.

6. The origin and nature of the material in the concrete block retaining structure, located on Parcel 20 should be identified and disposed appropriately. The retaining structure should be modified to prohibit the residual water with an oily sheen from entering the catch basin to the northeast of containment area until the soil is removed.

7. Soil samples should be retrieved from the northeast corner of Parcel 20 to document the type and quality of fill materials historically deposited there.

8. If soil and/or ground water contamination is discovered during the implementation of the project, the Permitting, Enforcement and Remediation Division should be notified in writing. The site will then be placed on the division's data base and further assessment will be made to determine the appropriate course of action. In order to achieve proper remediation, the extent of contamination should be clearly defined, a cleanup plan developed, and measures implemented that will clean up the site in accordance with applicable criteria in the Remediation Standard Regulations adopted pursuant to Section 22a-134k of the CGS.

9. If a "Transfer of Establishment" as defined in Section 22a-134 of the CGS occurs as part of this project, then a filing of the appropriate Property Transfer form is required under Section 22a-134a.

10. The removal of underground storage tanks should follow the procedures outlined in the code of the National Fire Protection Association (NFPA 30, Appendix B). Individual soil samples should be obtained from the underlying native soil. A

5. Further investigation should be performed of the use/function of metal pipes located to the east of Parcel 19 and presumed to have been associated with the former adjacent oil terminal operation.

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10. The removal of underground storage tanks should follow the procedures outlined in the code of the National Fire Protection Association (NFPA 30, Appendix B). Individual soil samples should be obtained from the underlying native soil. A

listing of potential contaminants that should be analyzed and suggested analytical methods is enclosed. If contaminated soil, ground water or free product is observed at the site or detected by sample analysis, the DEP must be immediately notified at (860) 424-3338 and corrective action must be undertaken in accordance with Section 22a-449(d)-106 of the Regulations of Connecticut State Agencies. Closure reports, including confirmation of sampling and clean-up, are required by Federal and State law.

3.6 Coastal Resources

The State Pier Project Area lies within Connecticut's coastal boundary as defined by Section 22a-94 of the Connecticut General Statutes and is subject to the provisions of the Coastal Management Act (CCMA) Sections 22a-90, et. seq. of the General Statutes. Actions funded by the State of Connecticut must be found to be consistent with the goals and policies of the CCMA.

The following coastal land and water resources are present in the Project Area:

3.6.1 Coastal Waters: Waters of Long Island Sound and its harbors, embayments, tidal rivers, streams and creeks.

The easterly and southerly boundaries of the Project Area are surrounded by coastal waters, namely the Thames River and Winthrop Cove. However, the focus of this study is directed to making the land activities of the port more efficient. Aside from stormwater quality measures which may be undertaken as part of construction, no coastal water activities are contemplated in this MDP.

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3.6.2 *<u>Coastal Hazard Area</u>: Land areas inundated during coastal storm events are subject to erosion induced by such events.*

All of the Project Area situated at or below elevation 10 is considered to be a coastal hazard area. While it does not appear that any residential structures fall within the coastal hazard area, both State Pier, CV Pier, the staging area for Fox Navigation and the rail yard are below el. 10. Structural measures have been installed to project water dependent uses and infrastructure. The proposed Action Area falls outside the coastal hazard area (refer to Figure 7).

3.6.3 *<u>Estuarine Embayment</u>: A projected coastal body of water within an open connection to the sea in which saline sea water is measurably diluted by fresh water including tidal rivers, bays, lagoons and coves.*

The Connecticut Department of Environmental Protection Fisheries Division considers the waterfront property at Winthrop Point southerly of the Amtrak bridge as an opportunity for quality recreation fishing and is contemplating the construction of a public fishing pier in this location due, in part, to its access to the deep waters of the Thames River and the DEP boat launch.

3.6.4 *<u>Developed Shorefront</u>: Those harbor areas which have been highly engineered and developed resulting in the functional impairment or substantial alteration of the natural physiographic features or systems.*

All of the shorefront in the vicinity of State Pier extending from the Amtrak bridge to Winthrop Cove was highly engineered in support of the former U.S. Navy operations. More recently, the Connecticut Department of Transportation invested $25 million to renovate the pier facility. Similar investments are being considered southerly of the Project Area as part of the City of New London's plan for revitalizing its waterfront.

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3.6.4 Developed Shoreform: Those harbor areas which have been highly engineered and developed resulting in the functional impairment or substantial alteration of the natural physiographic features or systems.

All of the shoreform in the vicinity of State Pier extending from the Amtrak bridge to Winthrop Cove was highly engineered in support of the former U.S. Navy operations. More recently, the Connecticut Department of Transportation invested $25 million to renovate the pier facility. Similar investments are being considered southerly of the Project Area as part of the City of New London's plan for revitalizing its waterfront.

3.6.5 *<u>Shorelands</u>: Land within the coastal boundary, exclusive of coastal hazard areas, which are not subject to coastal processes and which are comprised of typical upland features such as bedrock hills, till hills and drumlins.*

The land in the Project Area located to the west of the railroad tracks and the land within the proposed Action Area is shoreland situated on hills overlooking the port. All of the shoreland has been developed, mostly for non-residential use (see Section 3.1 herein).

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4.0 PROPOSED LAND USE PLAN AND ZONING

4.1 Proposed Land Use

4.1.1 Proposed Land Use - General

The framework for this Plan is based upon the redevelopment of the Action Area as an integrated multi-modal port facility area totally integrated into and a functioning component of the State Pier facility. The construction of a 150,000 square foot warehouse facility, with ancillary exterior storage for break-bulk cargo, has been suggested for construction in the Project Area. Part of such a facility could be located in the Action Area (see Appendix for concept illustration). The Plan recognizes the need to remove the obsolescence and incompatible land uses as well as certain environmental conditions which now exist in this area, and to create land resources where redevelopment activities can occur in such a manner as to significantly expand economic opportunities for the City all in the context of a thoroughly and carefully planned project, aesthetically related to the nearby downtown. Figure 14, "Proposed Land Use Map," illustrates the land uses proposed for the Municipal Development Plan Area.

4.1.2 Proposed Land Uses

The proposed land uses for the Project Area are those industrial/commercial uses which are consistent with and which will enhance the State Pier facility. Permitted uses outside of the Action Area are those specified for the applicable zone district within the New London Zoning Regulations. Uses permitted within the Action area are as follows:

4.1.2.2 Permitted Uses – Action Area

1. Port facilities for bulk shipping and storage facilities, indoor and outdoor.
2. Manufacturing, fabrication, processing and assembly of goods and products.
3. Railroad yards, storage, service and repair.

4. A yard of building, storing, repairing, selling or servicing boats which may include the following as an accessory use: office for the sale of marine equipment or products, dockside facilities for dispensing fuel, restroom and laundry facilities to serve overnight patrons.
5. Warehouses and building material storage but excluding outdoor storage of coal, coke, sand, fuel oil or scrap metals.
6. Base operations for fishing and lobstering business and the commercial bulk processing of fish and shellfish.
7. Ferry boat piers and terminals.

4.1.2.2 Lot and Building Requirements

1) Minimum lot area – 10,000 square feet.
2) Minimum lot width – 100 feet.
3) Minimum lot frontage – 75 feet.
4) Minimum setbacks.

<u>Front yard</u> – 20 feet. In no case shall new construction at the foundation line be less than 20 feet from the Thames River at mean high water level elevation.

<u>Side yard</u> – 10 feet, except a reduction in the side yard to "0" may be permitted.

<u>Rear yard</u> – 20 feet.

5) Maximum lot coverage of principal and accessory building – 50 percent.
6) Maximum building height – 45 feet, except the maximum height may be increased by special permit under the provisions of the New London Zoning Regulations.

4. A yard of building, storing, repairing, selling or servicing boats which may include the following as an accessory use: office for the sale of marine equipment or products, dockside facilities for dispensing fuel, restroom and laundry facilities to serve overnight patrons.

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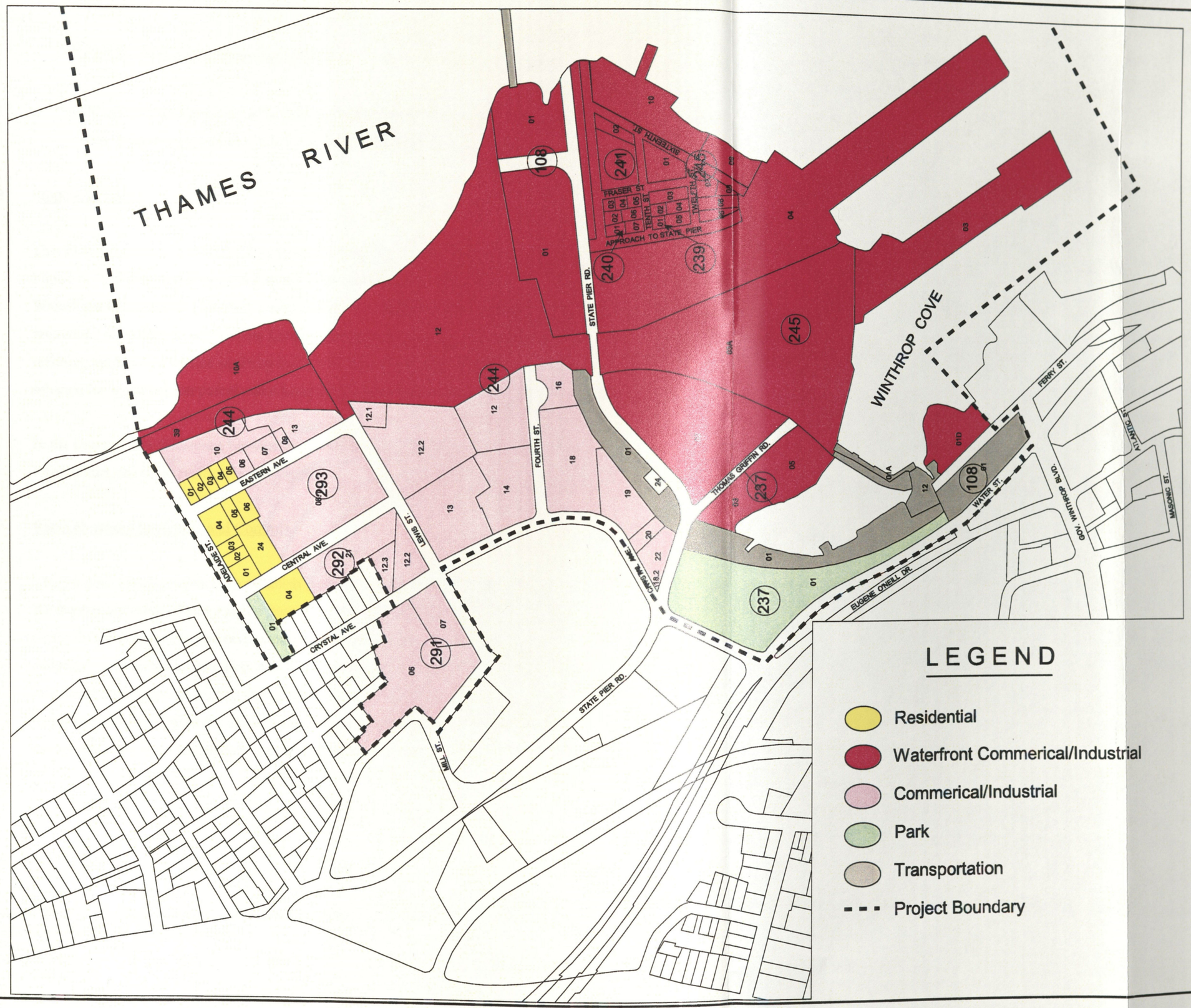
<u>Side yard</u> – 10 feet, except a reduction in the side yard to "0" may be permitted.

<u>Rear yard</u> – 20 feet.

5) Maximum lot coverage of principal and accessory building – 50 percent.

6) Maximum building height – 45 feet, except the maximum height may be increased by special permit under the provisions of the New London Zoning Regulations.



In association with:
HMA
Harrall-Michalowski Associates
Planning Consultants
Hamden, CT

PROPOSED LAND USE

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

Engineering, Landscape Architecture and Environmental Science
Milone & MacBroom
715 South Main Street
Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

Designed	Drawn	Checked

SCALE 1" = 400'

DATE JANUARY 21, 1999

PROJECT NO. 1876-02-1

FIG. 14

4.1.2.3. Off-Street Parking and Loading

Off-street parking and loading spaces shall be provided for each lot in accordance with the provisions of the New London Zoning Regulations.

4.2 Proposed Zoning

This Plan proposes to utilize the Zoning Districts as they currently exist and as shown in Figure 5, "Existing and Proposed Zoning." The Action Area will remain within the WCI, Waterfront Commercial Industrial zone district. Any future rezoning will follow the provisions of Article XI of the New London Zoning Regulations. If required, any rezoning application will be made by the NLDC at such time as a redeveloper has been selected for a disposition parcel and a Land Disposition Agreement executed.

In the event of any difference between the land use controls of this Plan and the Zoning Regulations, the more restrictive shall apply.

4.3 Redevelopment Standards and Controls

The purpose of this section is to establish standards, controls, guidelines, and procedures for the development of integrated industrial and/or commercial projects in the Project Area. In the preparation and review of the plans for this project, all elements of the proposed development, including structures, open spaces, pedestrian walkways, curb-cuts, landscaping and any other improvements to be constructed on the site, shall be considered as one unified development undertaking even if construction of various components are to be staged over a period of time.

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4.3.1 Master Site Plan

All plans submitted by the redeveloper relating to the construction of all facilities, buildings and improvements shall take the form of a Master Site Plan for the disposition parcel to be redeveloped. The Master Site Plan shall assure that the proposed development is properly related to surrounding development and to existing development in the adjacent district.

4.3.2 Site Planning, Architectural Guidelines, and Design Review

All site plans, architectural plans and drawings and such other documentation prepared in relation to the proposed physical development of this Project Area, including all public open spaces whether open or enclosed, shall conform to the Master Site Plan and to the Plan objectives listed herein. While the proposed redeveloper is given wide latitude in concept, design and layout within the standards and guidelines specified in this Plan and the City's Zoning Regulations, all structures, facilities, other improvements and public areas must reflect distinguished architectural expression and techniques in order to assure attractiveness, quality and permanence.

Prior to applying to the Building Department for any permits required for any construction activity on any portion of the project site, the redeveloper shall submit plans, drawings, renderings, and such other graphic or written documentation as may be required by the New London Development Corporation (NLDC), to the NLDC for its review and approval. The nature and type of plans and other drawings and materials to be submitted, the time frames for such submission(s), the procedure(s) to be followed in making such submissions and the process to be undertaken by the NLDC in its review and approval of said submissions shall be set forth in the Land Disposition Agreement to be executed between the Redeveloper, the City and the NLDC.

4.3.3 Regulations and Controls Applying To All Sections of the Project Area

(1) Urban Design Objectives

The design objectives which follow are set forth as a guide to both public and private agencies which will be engaged in development and/or rehabilitation of properties in this Project Area. Their intent is the establishment of a total environment, blending existing and new or rehabilitation developments into a harmoniously functioning area. These objectives will be a major consideration of the NLDC during its review of development proposals.

(a) Integrated Design

Buildings within the Project Area should be considered as integral parts of an overall development area and development with appropriate consideration for both proposed and existing buildings with respect to height, mass, siting, circulation patterns, location, materials, orientation, signs, lighting and use.

(b) Appropriateness of Design and Materials

Designs and materials for all development should reflect the traditions and architectural style of New London. Particular care should be taken in the design and choice of materials for buildings adjacent to existing historic or architecturally significant buildings.

(c) Commercial Objectives

Commercial uses should be developed with an urban rather than suburban character. The State Pier district is highly visible from New London's downtown waterfront, and the character of development should not be overly assertive with respect to size and shape of buildings, signs, colors and materials. Individual developments must be designed so as to achieve an overall feeling of unity. Where commercial uses abut residential areas, they should be appropriately screened and/or provided with harmonious facades, walls and other architectural elements.

(d) Liberal Landscaping

Planting of trees and liberal landscaping appropriate to the functioning of the area, the overall landscape and drainage pattern should be encouraged. Existing trees should be preserved wherever possible. New trees should be of the largest practical diameter.

(e) Signs

The design and use of signs shall be in keeping with the area's overall architectural character. Coordination of the type, size and location of signs shall be required.

(f) Existing Development

Existing buildings and site development to remain should be rehabilitated to fit within the general design framework.

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In the event that any conflict between the standards set forth herein and those contained in the New London Zoning Regulations, the stricter standards shall control.

4.4 Rehabilitation Standards and Controls

Standards have been developed by the City to serve as the basis for rehabilitation of existing structures to provide an environment and accommodations which are decent, safe, sanitary, livable and designed to have continuing appeal. These standards are directed to the rehabilitation of structures on a long-term basis with an estimated mortgage life of 20 years, except for normal replacement items.

The requirements set forth supplement all State and local codes adopted by the City of New London and all ordinances applicable to the regulation and control of building construction and renovation, and constitute additional controls and requirements.

The rehabilitation of any building under the standards must also be in compliance with all such applicable codes and ordinances. These include, but are not limited to:

a. New London Housing Code
b. BOCA National Building Code/1990, as amended
c. National Electric Code: NEPA 70/1993
d. BOCA National Mechanical Code/1990, as amended
e. National Life Safety Code: NEPA 101/1991
f. New London Zoning Regulations

Wherever local or state code regulations or requirements permit lower standards than those required, the Property Rehabilitation Standards shall apply.

In the event that any conflict between the standards set forth herein and those contained in the New London Zoning Regulations, the stricter standards shall control.

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Wherever local or state code regulations or requirements permit lower standards than those required, the Property Rehabilitation Standards shall apply.

4.5 Interim Use of Acquired Property

Although it is anticipated that all properties to be acquired will be substantially renovated or demolished upon completion of relocation of building occupants and the sites utilized for construction of project improvements, interim use of acquired buildings or vacant land shall be permitted under the conditions set forth herein.

With the approval of the NLDC upon the submission and review of such documentation as it may require, a building or structure which has been acquired and which is scheduled for demolition may be retained and used by a redeveloper and/or its contractor(s) as a site field office to house such staff as is required to supervise and otherwise oversee construction activities occurring within this Project Area. No portion of any building retained under this paragraph may be leased or otherwise occupied by an entity other than those specified herein above and approved by the NLDC. Upon completion of the construction activities for which this building was retained or no later than a date established by the NLDC, the building shall be demolished or substantially renovated.

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5.0 PROPOSED IMPROVEMENTS TO ACTION AREA

5.1 Proposed Site Improvements

Within the Action Area, the proposed improvements generally will involve the removal of structures, streets and utilities, and the grading and stabilization of the site. Upon completion of improvements, the site will be suitable for reuse as an outside storage area for cargo or for the construction of a port-related warehouse or manufacturing facility. The contemplated improvements will be compatible with the existing adjacent uses including Fox Navigation, State of Connecticut port office building, and the cargo handling operations conducted by the port operator, Logistec.

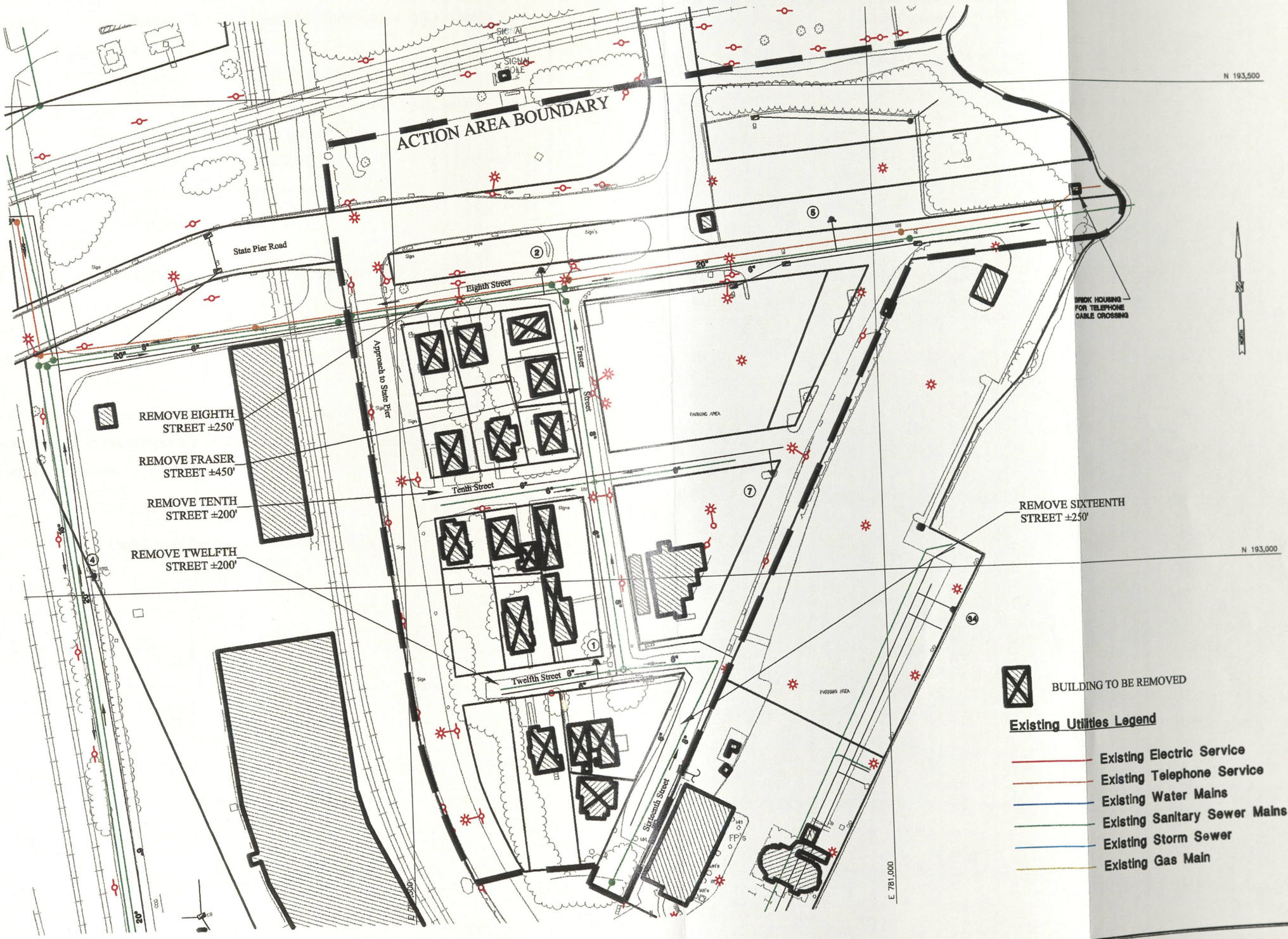
More specifically, the proposed site improvements will include:

5.1.1 The preparation of a demolition plan and site plan. The plan would include a reconnaissance survey of the Action Area in order to identify and evaluate all archeological resources that may exist within the project boundaries and the protection thereof pursuant to guidelines promulgated by the office of the State Archeologist and the State Historic Preservation Officer, specifically the "Environmental Review Primer for Connecticut's Archeological Resources."

5.1.2 The demolition of 17 wood frame structures and existing improvements on 14 residential properties. All structures, including foundations, will be removed from the Action Area.

5.1.3 The removal of the following streets and related improvements:

- Eighth Street (maintain existing subsurface utilities). Removal of Eighth Street will need to be coordinated with ConnDOT so as not to impact existing vehicular circulation patterns critical to port operations.



In Association with:
HMA
Harrall Michalowski Associates
Planning Consultants Hamden, CT

SITE PLAN - PROPOSED SITE DEMOLITION

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

Milone & MacBroom
Environmental Engineers Landscape Architecture and Environmental Planners
76 Beach Road, Box
Clinton, Connecticut 06413
(203) 669-1773 FAX (203) 669-9133

---	JFK	VCM
DESIGNED	DRAWN	CHECKED

SCALE 1" = 100'

DATE JANUARY 21, 1999

PROJECT No. 1876-02-1

DWG NAME HL-TARGET.DWG

FIG. 13

SHEET No.

- Tenth Street between State Pier Access Road and Fraser Street (balance of street has been removed previously)
- Twelfth Street from State Pier Access Road and Sixteenth Street
- Sixteenth from Twelfth Street south (balance has been removed previously)
- Fraser Street from Eighth Street to Twelfth Street

5.1.4 The grading of entire disturbed area uniformly to achieve positive grade and blend with surrounding undisturbed property and stabilize the site by placing soil and temporary vegetative cover.

5.1.5 Access to the State Pier will be retained via State Pier Road (State Road 437) and the State Pier access.

5.2 Site Improvement Budget

The following is an opinion of probable construction cost to perform the work described above. The opinion is subject to revision based on actual construction documents and project specifications.

TABLE 6
Opinion of Probable Construction Costs
Action Area
State Pier MDP

Item	Unit	Quantity	Unit Price	Cost
Demolish Building & Site Improvements	EA	14	$25,000	$350,000
Remove Pavement & Abandon Utilities	LF	1,350	50	67,500
Subgrade Disturbed Area	SY	13,500	2	27,000
Provide Soil & Seed	SY	13,500	3	40,500
Subtotal				**$485,000**
Engineering, Inspections				$95,000
Contingencies				$75,000
Total				**$655,000**

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Subtotal				**$485,000**
Engineering, Inspections				$95,000
Contingencies				$75,000
Total				**$655,000**

5.3 Traffic Impacts

For purposes of analysis and comparison, two development scenarios were analyzed: Minimal Developmental Growth and Total Redevelopment. Minimal developmental growth assumes no major development will occur. This scenario, earlier referenced as "background traffic," accounts for normal traffic growth in the area. Total redevelopment assumes parcel consolidation, possible roadway closure or restructuring and build-out of selected parcels. It should be stressed that the information developed within this study is meant for analysis only.

Based on preliminary estimates, the MDP Action Area is anticipated to support a ±150,000 square foot warehouse development. Estimates of the amount of traffic expected to be generated by the anticipated warehouse development were made using the 1997 Institute of Transportation Engineers (ITE) publication "Trip Generation." For purposes of analysis, Land Use Code 150 (Warehousing) was used. It is anticipated that this proposed development will generate a total of 123 vehicles during the AM peak hour (100 In, 23 Out) and 113 vehicles during the PM peak hour (27 In, 86 Out).

The addition of these vehicle trips to the background traffic continues to indicate that the intersection of Williams Street and State Pier Road will operate poorly for motorists making a left turn from State Pier Road onto Williams Street. Overall operations at the remaining intersections are expected to be "good," experiencing LOS C or better. Level Of Service results are summarized in Appendix B.

The intersection of State Pier Road at Williams Street has been evaluated to determine the need for a traffic signal. The criteria established for the installation of a traffic signal as outlined in the Manual on Uniform Traffic Control Devices has been reviewed. The results of our investigation indicate that a traffic signal may be warranted in the future. In conjunction with the State Traffic Commission (STC) certificate application, the warrants for the installation of a traffic signal at this location will need to be further explored.

5.3.1 State Traffic Commission Requirements

The Connecticut Department of Transportation State Traffic Commission (STC) requires certificates for the construction or expansion of developments which will generate large volumes of traffic. Based on the guidelines of Section 14-311, in coordination with any plans for redevelopment, an application will need to be submitted to the STC for their review and approval in the event that a building of 100,000 square feet is constructed or parking for more than 200 cars is developed.

5.3.2 Parking

To determine the number of parking spaces required to support activities for the proposed ±100,000 square foot warehouse, the City of New London's Zoning Regulations were reviewed. The current Zoning Regulations do not provide parking rates for warehousing facilities. However, the City has determined that industrial (non-warehouse) use will require 1 space per 500 square feet. Based on experiences in other communities, this ratio seems to be applicable for warehouse facilities. Therefore, 200 spaces are likely to be needed to support the anticipated development of the Action Area. However, this standard should be reviewed for its applicability when a specific development is proposed.

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5.4 Consistency with Coastal Management Act

The activities proposed in this MDP for the Action Area are consistent with the policies contained in the CCMA. It should be clearly understood that the work contemplated in the short term is limited to demolition and site grading. Upon completion, it is likely that the vacant site will be redeveloped in the near future for a port related use such as warehousing. However, there are no building or site plans which can be evaluated for their specific impacts. When specific plans are prepared, they will require further review for CCMA consistency.

For the coastal resources identified in the State Pier Project Area, the following findings may be made with respect to the activities in the Action Area.

5.4.1 Coastal Waters

No activities are proposed directly in the coastal waters adjacent to the Action Area. The immediate site preparation and eventual development will alter surface runoff discharges to these waters. Therefore, appropriate controls, designed to remove sediment and oil or grease typically found in runoff from parking and driving areas, will be included in any new or reconstructed stormwater collection system to be installed in the Project Area. Potential controls include gross particle separators, deep sump catch basins with oil-grease traps, and/or sedimentation basins. Catch basins installed in conjunction with roadway or parking lot paving will have deep sumps to trap sediments and hoods to trap oil and grease. If more than one acre of pavement drains to a common discharge point, a gross particle separator will also be installed. Gross particle separators are very effective in removing contaminants. Therefore, it is recommended that the appropriate unit with a cyclonic design be installed in conjunction with each outfall, depending on the size of the drainage area. Provisions will be made for the periodic maintenance that will be required to ensure continued effectiveness of these control measures.

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The proposed site improvements will require the general permit for stormwater discharges from construction sites where five or more acres are to be disturbed. In addition, the subsequent development of the warehouse facility will require the general stormwater permit for commercial facilities. It should also be noted that an additional requirements of these general permits is that where the discharge is located less than 500 feet from a tidal wetland, the stormwater collection system must be designed to retain the volume of runoff generated by one inch of rainfall on the site.

5.4.2 Coastal Hazard Area

No activities proposed in the Action Area fall within the coastal hazard area.

5.4.3 Estuarine Embayment

No proposed activities will adversely affect the estuarine embayment. Access to the boat launch is being maintained. The site of the proposed fishing pier at Winthrop Point will not be affected by the contemplated redevelopment of the Action Area.

5.4.4 Developed Shorefront

No further extension of the developed shorefront is contemplated by the activities in the Action Area.

5.4.5 Shoreland

The proposed redevelopment within the Action Area is designed to remove existing blighted conditions in order to increase the efficiency of a water dependent use. Future construction will maintain access to the waterfront and will incorporate site planning and design features which will limit negative visual impacts.

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6.0 MARKET ANALYSIS

6.1 Background

A study entitled "Real Estate Market Analysis, State Pier Property, New London, CT" has been prepared by RKG Associates, Inc. for NLDC and appears in Appendix C. The following is a summary of that study.

The construction of a 150,000 square foot warehouse facility, with ancillary exterior storage for break-bulk cargo operations, has been suggested as a likely use for the MDP Project Area, all or part of which could occur in the Action Area at the State Pier. RKG Associates initiated a market study to update the real estate analysis contained in the *Transportation and Land Use Compatibility Study for the New London State Pier,* prepared in 1997 by the Maquire Group. This report represents an update of the previous study. Current market conditions were evaluated for office and industrial uses. Also, the locational attributes of the site were evaluated as they relate to marketability of the site.

In New London County, the expansion of the gaming and tourism industries has had the most noticeable impact on the commercial and residential real estate market over the past few years. In addition, the downsizing of defense-related industries has created increased vacancies in office, industrial, and commercial properties.

6.2 Findings

Both the New London County and the City real estate market were analyzed in order to evaluate alternative real estate market options for the State Pier site. The major findings and conclusions of this analysis are summarized below.

6.2.1 Site Specific Findings

- The State Pier would benefit from the removal of the enclave of residential houses, not only in terms of making the site more developable but also removing a blight problem.

- In addition, the proposed traffic improvements for the area should serve to reduce traffic confusion and improve circulation.

- The creation of a large warehouse/distribution operation would provide a complimentary use to the existing industrial activities in the neighborhood. In addition, the availability of multi-modal transportation alternatives could help regional businesses compete more efficiently.

- According to regional real estate brokers, the strongest demand for industrial properties is for modern, high bay warehouse facilities, similar to the facility proposed for the State Pier. Given the proximity of the property to Interstate 95, this use would seem to be a good fit for the State Pier site. Although manufacturing use would provide greater benefits in terms of employment opportunities, the manufacturing segment of the regional economy has been hard hit. Manufacturing in New London as well as Connecticut has been on the decline for the last 50 years, and the State Pier property is not likely to reverse this trend. Water-related manufacturers would be good alternatives and the Free Trade Zone designation may encourage a company looking to expand. However, the site does not provide enough land area for a large-scale plant like Electric Boat or Dow Chemical.

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6.2.2 Findings Related to the City and Region

- Since 1980, the New London County's employment base has been transformed from a defense-related manufacturing base to more of a service and tourism oriented economy.

- The New London County real estate market, similar to its economic base, has been in transition and is beginning to show signs of recovery. Real estate values, in general, have been steadily increasing over the past several years. However, values remain below levels experienced in the mid to late 1980s in many markets. In addition, the recession of the early 1990s has left a number of buildings trading well below their replacement costs.

- The real estate market in New London County is primarily dominated by end users. This is evidenced by the large and diverse facilities owned by the major employers located throughout the region.

- The larger region has an adequate supply of commercial and industrial land for long-term expansion. However, the supply of commercial and industrial land in the City of New London is limited. Development of the State Pier property for warehouse operations will help to meet the needs of this segment of the market, which has performed well over the past two years, and capitalize on the proximity of the site to Interstate 95.

- A supply of 2.5 million SF of non-residential buildings is available in the New London County market. Approximately 31 percent of non-residential buildings are located within the City of New London, with the remaining 69 percent scattered primarily between Norwich, Jewett City, Groton, and Waterford. Although a majority of this supply (65%) is industrial, only a small percentage (7%) is in the City of New London.

6.2.2 Findings Related to the City and Region

- Since 1980, the New London County's employment base has been transformed from a defense-related manufacturing base to more of a service and tourism oriented economy.

- The New London County real estate market, similar to its economic base, has been in transition and is beginning to show signs of recovery. Real estate values, in general, have been steadily increasing over the past several years. However, values remain below levels experienced in the mid to late 1980s in many markets. In addition, the recession of the early 1990s has left a number of buildings trading well below their replacement costs.

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- A large percentage of the regional supply of industrial buildings (40%) is older mill-type complexes. In contrast, only 20 percent of the region's available industrial properties is considered to be "modern" (post-1980 construction). At this time, there is only one available post-1980 industrial building (15,000 SF) in the City of New London. This suggests that there is a limited supply of quality industrial space for potential users and that development of a modern warehouse industrial facility at the State Pier site could be supported.

- Twenty four percent (598,200 SF) of the total regional supply of non-residential buildings are office properties of which 62 percent (371,400 SF) are within the City of New London. This includes approximately 190,000 SF at the former Naval Undersea Warfare Center (NUWC) site, which is expected to be demolished, according to the Municipal Development Plan for Fort Trumbull. At the present time, there is a limited supply of available Class A office space (46,000 SF) in the City of New London. Most of the other available office properties (97,100 SF) are Class B and C buildings in the downtown area.

- Retail/commercial service buildings constitute the remaining 11 percent (265,615 SF) of the available regional building supply. Nearly 54 percent (143,000 SF) of this space is located in the City of New London, and a majority of this supply is ground flow space in the downtown area, suggesting a sizable inventory. Recently, the New London Development Corporation initiated a Downtown Master Plan that will develop a long-term strategy and implementation plan for revitalizing this section of the City.

- Real estate conditions in the City of New London have shown signs of recovery as evidenced by 90 percent occupancy level at selected Class A office buildings. However, occupancy at the older Class B and C buildings is lagging behind. Although rents at Class A properties have stabilized, they remain below the level

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needed to support new speculative construction. In addition, the historic sales values of Class A office space, created by past imbalances in the market, have not recovered sufficiently to justify new construction except for an end-user.

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7.0 ACQUISITION AND DISPOSITION

7.1 Land Acquisition

7.1.1 Properties Designated for Acquisition

All properties to be acquired are shown on Figure 15, "Acquisition Map," attached hereto and listed in Table 7 below. The listed properties will be acquired on or before December 31, 2000, unless this date is extended by the City Council upon request of the NLDC. All buildings and other structures on land to be acquired will be demolished and removed to permit proper redevelopment for the proposed land uses set forth in this Development Plan. No property is proposed to be acquired for rehabilitation, conservation, or historical preservation.

It should be noted that the State of Connecticut owns land within the Action Area which will not be acquired under this Plan but may be made available at some time in the future under a lease arrangement.

TABLE 7

Properties Proposed To Be Acquired
Action Area

Assessors Map, Block, Lot	Street Address
38-239-01	73 Tenth Street
38-239-02	75 Tenth Street
38-239-03	38 Twelfth Street
38-239-04	34 Twelfth Street
38-239-05	Lot 5 Twelfth Street
38-240-01	29 Eighth Street
38-240-02	33 Eighth Street
38-240-03	28 Fraser Street
38-240-04	24 Fraser Street
38-240-05	82 Tenth Street
38-240-06	78 Tenth Street
38-240-07	74 Tenth Street
38-241-01	Lot 1 Tenth Street
38-241-02	Lot 2 Sixteenth Street
38-245-05	Lot 5 Twelfth Street
38-245-06	33 Twelfth Street
38-245-07	39 Twelfth Street
38-245-08	54 Sixteenth Street
38-245-09	Lot 9 Sixteenth Street

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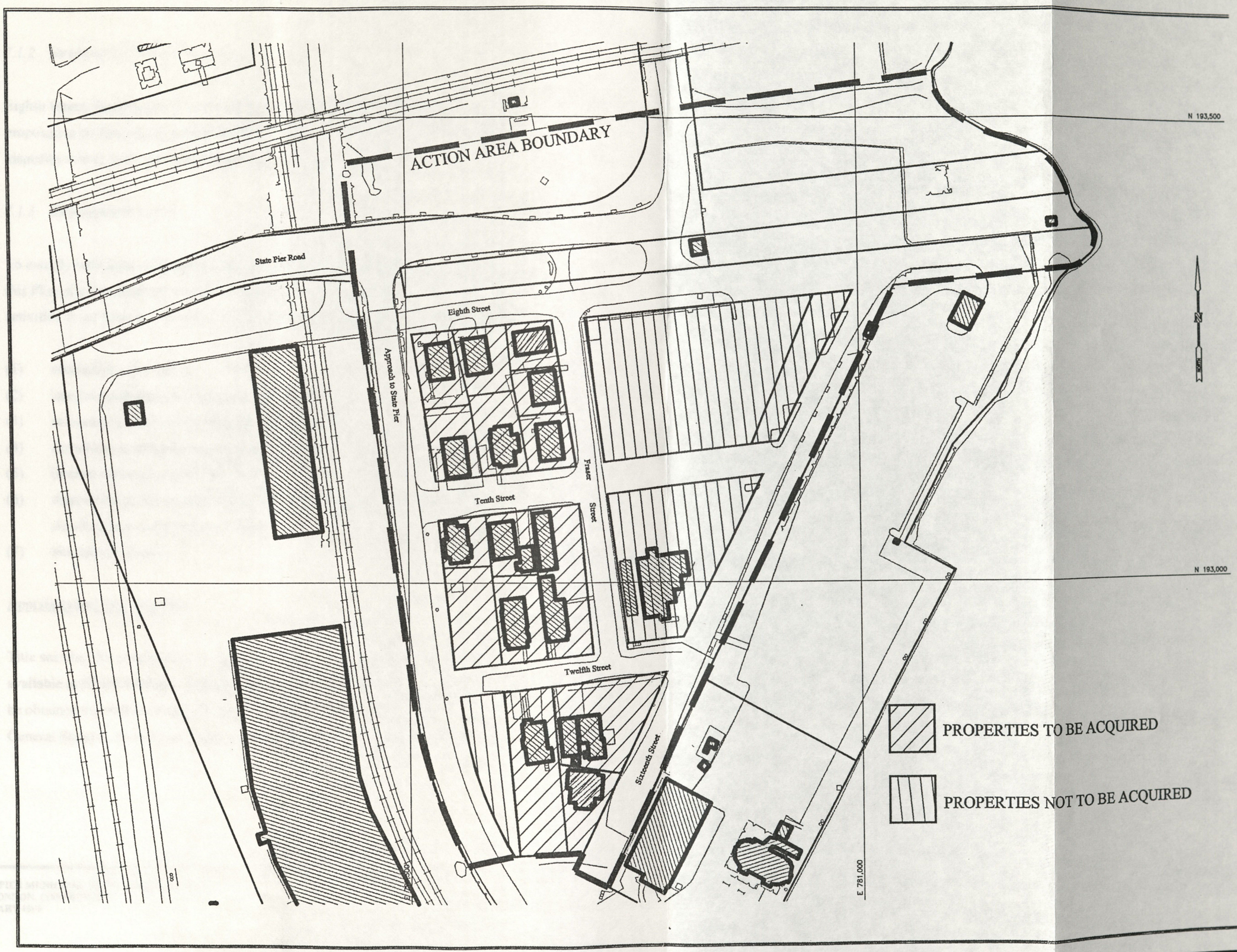
TABLE 7

Properties Proposed To Be Acquired
Action Area

Assessor Map, Block, Lot	Street Address
36-329-01	75 Tenth Street
36-329-02	75 Tenth Street
36-329-03	34 Twelfth Street
36-329-04	34 Twelfth Street
36-329-05	Lot 5 Twelfth Street
36-330-01	29 Elgin Street
36-330-02	33 Elgin Street
36-330-03	25 Fraser Street
36-330-04	27 Fraser Street
36-330-05	82 Tenth Street
36-330-06	78 Tenth Street
36-330-07	74 Tenth Street
36-341-01	Lot 1 Tenth Street
36-341-02	Lot 2 Sixteenth Street
36-343-05	Lot 5 Twelfth Street
36-343-06	33 Twelfth Street
36-343-07	37 Twelfth Street
36-343-08	34 Sixteenth Street
36-343-09	Lot 9 Sixteenth Street


ACTION AREA BOUNDARY
N 193,500
N 193,000
E 781,000
State Pier Road
Approach to State Pier
Eighth Street
Tenth Street
Fraser Street
Twelfth Street
Sixteenth Street
PROPERTIES TO BE ACQUIRED
PROPERTIES NOT TO BE ACQUIRED

7.1.2 Streets to be Closed, Vacated or Realigned

Eighth Street, Tenth Street, Twelfth Street, Sixteenth Street and Fraser Street are proposed to be eliminated under this Plan. Figure 16, "Rights-Of-Way Adjustment Plan," identifies streets to be vacated in order to achieve project objectives.

7.1.3 Development Actions

To comply with local objectives as set forth herein and to accomplish the objectives of this Plan, the Development Agency will utilize full range of development and renewal activities as set forth in Chapter 132 of the General Statutes, as amended, including:

(1) acquisition of property;
(2) interim management of acquired properties;
(3) relocation of individuals, families and businesses;
(4) demolition of structures and improvements;
(5) interim use of properties acquired;
(6) disposition at fair market value by sale, lease or transfer of property for private development in accordance with the regulations set forth in this Plan; and
(7) site improvements

7.2 Appraisals and Title Searches

Title searches for properties to be acquired by the NLDC pursuant to the Plan will be available at NLDC's offices. Appraisals for properties to be acquired by the NLDC will be obtained but will be exempt from public disclosure under Section 1-19 (b)(7) of the General Statutes, as amended, until such time as all of the properties have been acquired.

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7.3 Parcels Not Designated for Acquisition That May Be Acquired

7.3.1 Parcels designated as "not-to-be-acquired" on Figure 15, "Acquisition Map," may be acquired under this Plan.

7.3.2 Those properties designated as "not-to-be-acquired" which are not utilized in conformance with the provisions of this Plan and/or are not in conformance with the City's Property Rehabilitation Standards may be subject to acquisition by the NLDC. Upon the acquisition of such properties and based upon studies and data available, the NLDC will either:

(a) Rehabilitate the property in conformance with the Property Rehabilitation Standards and objectives of this Development Plan and dispose of said property at its fair market value in accordance with applicable regulations. If a sale cannot be consummated by the time rehabilitation is accomplished, the property may be rented pending continuing sale efforts;

(b) Sell or lease the property at its fair market value subject to rehabilitation in conformance with the Property Rehabilitation Standards and objectives of this Plan; or

(c) Demolish the structure or structures thereon and dispose of the land for Development at its fair market value for uses in accordance with the Plan.

7.3.3 Property information and final engineering design to be obtained during the execution stage of this project may indicate the need for minor revisions in taking lines, thus requiring the acquisition of property not at this time designated for acquisition.

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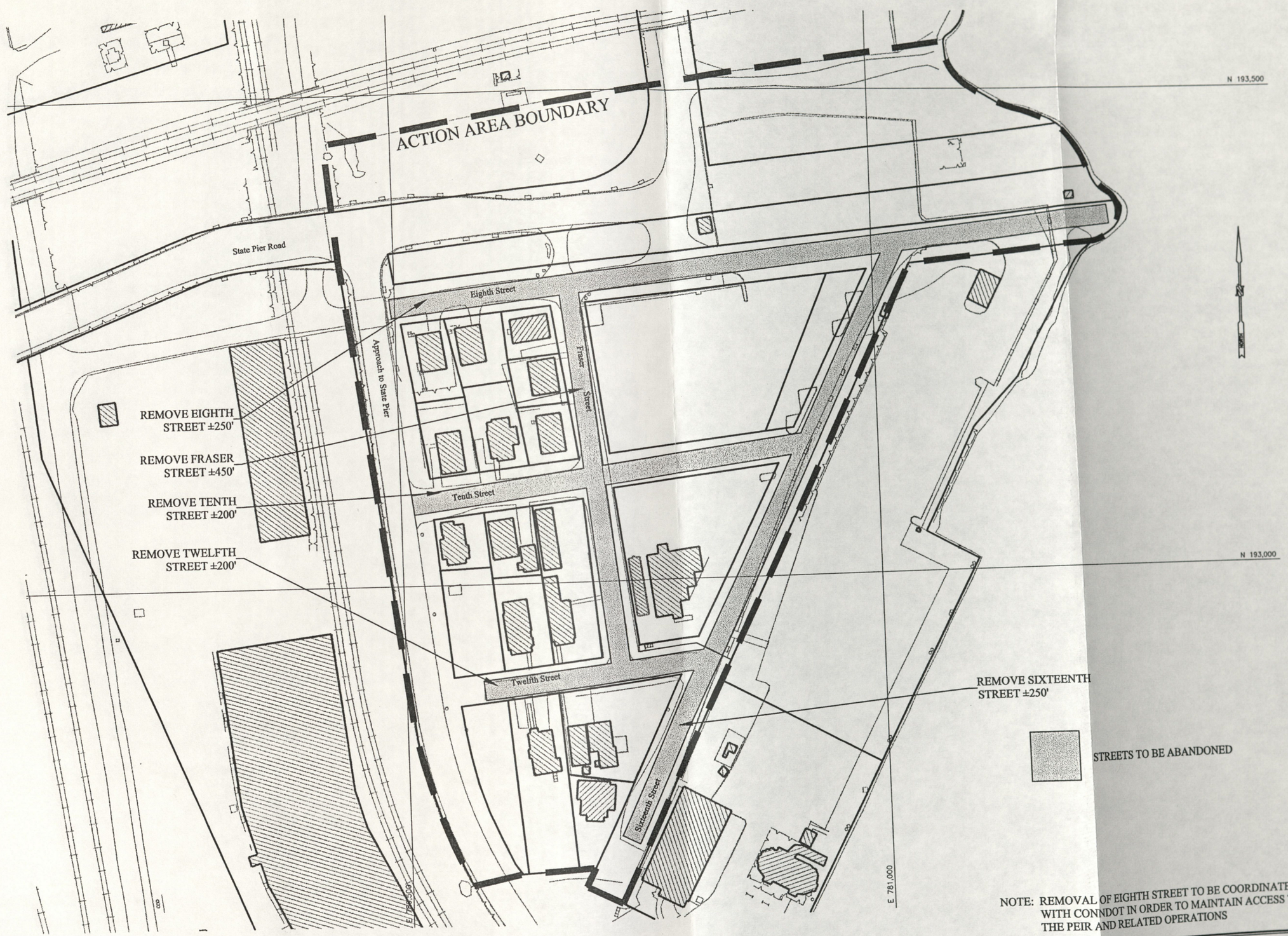

NOTE: REMOVAL OF EIGHTH STREET TO BE COORDINATED WITH CONNDOT IN ORDER TO MAINTAIN ACCESS TO THE PEIR AND RELATED OPERATIONS

In Association with:
HMA
Harrell Michalowski Associates
Planning Consultants Hamden, CT

SITE PLAN - RIGHT-OF-WAY ADJUSTMENTS

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

Milone & MacBroom
Engineering, Environmental Consultants and Water Resource Scientists
38 South Main Street
Cheshire, Connecticut 06410
(203) 272-1773 FAX (203) 272-9733

DESIGNED	JFK	VCM
DRAWN		CHECKED

SCALE 1" = 100'
DATE JANUARY 21, 1999
PROJECT NO. 1876-02-1
DWG NAME NL-ROWLDWG

FIG. 16
SHEET NO.

In Association with:

HMA
Harrall Michalowski Associates
Planning Consultants Hamden, CT

SITE PLAN - PROPERTY DISPOSITION

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

Engineering, Surveying, Architecture and Environmental Science

MILONE & MACBROOM

38 South Main Street
Cheshire, Connecticut 06410
(203) 250-6775 FAX (203) 272-9733

---	JFK	VCM
SCALE	1" = 100'	
DATE	JANUARY 21, 1999	
PROJECT NO.	1876-02-1	
DWG NAME	RL-DISP.DWG	

FIG. 17

SHEET NO.

7.4 Land Disposition

The Action Area is proposed to be assembled into one disposition parcel as illustrated in Figure 17, "Disposition Map." If future developer proposals merit subdivision into more than one parcel to achieve the objectives of this Plan such subdivision may be considered by the New London Development Corporation.

7.4.1 Restrictions Upon Use of the Parcel. Redeveloper agrees for itself and its successors and assigns as successors in interest to the parcel, or any part thereof, that the deed conveying the Parcel shall contain language covenanting on the part of Redeveloper and its successors and assigns that:

7.4.1.1 The parcel shall be devoted principally to, and only to, business purposes, including but not limited to the uses contemplated by the Plan, and shall not be used or devoted for any other purpose, or contrary to any of the limitations or requirements of said Plan. All improvements made pursuant to the Plan and this Agreement shall be used in accordance with the Plan unless prior written consent is given by the NLDC for a different use;

7.4.1.2 The Parcel shall not be sold, leased or otherwise disposed of for the purposes of speculation;

7.4.1.3 Neither Redeveloper nor any successors or assigns shall discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious, creed, age, marital status, national origin, sex, mental retardation or physical disability, including, but not limited to blindness, in the sale, lease or rental, or in the use or occupancy of the Parcel or any improvements to be erected thereon, and shall not affect or execute any agreement, lease, conveyance, or other instrument whereby the Parcel or any part thereof are restricted on the basis of race, color,

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religious creed, age, marital status, national origin, sex, mental retardation or physical disability, including, but not limited to blindness, in the sale, lease or occupancy thereof. Redeveloper shall comply with all state and local laws, in effect from time to time, prohibiting discrimination or segregation by reason of race, color, religious creed, age, marital status, national origin, sex, mental retardation or physical disability, including, but not limited to blindness, in the sale, lease or occupancy of the Parcel. Redeveloper shall not sell, lease or otherwise convey any interest in, or permit use or occupancy of, the Parcel unless the transferee agrees to bind itself to the Redeveloper's obligations under this paragraph.

7.4.2 Land Use Controls and Covenants on Disposition Parcels

The land use controls contained in this section and Chapter 4 shall be incorporated into land covenants filed on the land records before commencing land disposition.

Schematic design, design development and final design submissions shall be reviewed and approved by the New London Development Corporation. Any required City of New London design review shall also be completed. The regulations issued by the City and the guidelines of this Plan shall form the basis for this review.

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8.0 RELOCATION OF PROJECT OCCUPANTS

8.1 General

The relocation program of the NLDC is more fully set forth in the document "Relocation Plan for the State Pier Municipal Development Project." This Relocation Plan is available for public inspection at the office of the NLDC. The following information is set forth to comply with the Connecticut statutory requirements concerning the relocation of project occupants and to provide the City Council with sufficient information to find that the proposed relocation is feasible.

8.2 Families and Individuals to be Displaced by the Proposed Improvements

A study of the Project Area during late 1998 identified 20 households that could possibly be displaced as a result of acquisitions scheduled to occur under the project timetable. The number of households by block that potentially could be displaced is as follows:

TABLE 8
Households To Be Displaced

Assessor's Block No.	Assessor's Map	Residential Buildings	Potential Households	Total Dwelling Units
239	38	4*	6	6
240	38	7**	9	12
245	38	3	5	5
TOTAL:		**14**	**20**	**23**

* One (1) residential building converted to laundromat and is now vacant.
** Two (2) buildings are vacant.

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TOTAL:		14	20	23

* One (1) residential building converted to industrial and is now vacant.
** Two (2) buildings are vacant.

Of the 20 households to be displaced, 9 are owner occupants and 11 are renters. As occupancy was estimated from secondary sources, it is likely that not all rental units are occupied at this time.

8.3 Businesses and Non-profit Agencies to be Displaced by the Proposed Improvements

There are no businesses or non-profit agencies in the initial Action Area.

8.4 Availability of Relocation Housing

According to the Connecticut Department of Economic and Community Development 1997 Estimate of Housing Units for the City of New London, the City contains a total housing stock of 11,942 dwelling units, of which 2,224 (19%) are public or government-assisted housing units. The City has a high percentage of rental units with 6,758 renter-occupied units and 3,954 owner-occupied units.

According to the 1990 Census, the overall vacancy rate for New London was 10.5% or 1,258 units. According to the current Multiple Listing Service, there are 83 houses for sale, of which 49 are under $100,000 in sales price. An ongoing survey of rentals from the newspaper classified ads indicates in an average weekly listing, between 15 and 20 one-bedroom units listed for rent; 10 to 15 two-bedroom units listed; 5 three-bedroom units listed; and 5 studio/efficiency units listed for rent in New London. In addition, the larger apartment complexes in the area advertised unit availability without providing unit characteristics. Some of these ads offer bonus months or discounted rent in order to attract occupants.

The initial relocation surveys and the experience gained from purchase of property and from recent relocations administered by the NLDC indicate that households in the State Pier MDP Action Area have available within the City's and region's housing stock adequate comparable dwelling units as relocation resources.

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The initial relocation surveys and the experience gained from purchase of property and from recent relocations administered by the NLDC indicate that households in the State Pier MDP Action Area have available within the City's and region's housing stock adequate comparable dwelling units as relocation resources.

In view of the financial and other assistance that will be available to qualifying households displaced by project actions under the Uniform Relocation Assistance Act supplemented by the Connecticut Housing Finance Agency and as explained in the project's Relocation Plan, it is reasonable to conclude that there are sufficient suitable living accommodations within the City of New London and the region for the 20 households at rental rates and sales prices within their financial reach. Implementation of the State Pier MDP is scheduled to proceed before other redevelopment projects in New London full commence thereby negating impact of these projects on relocation resources for State Pier displacees.

8.5 Availability of Facilities for Displaced Businesses and Non-profit Agencies

Although not applicable for the initial Action Area, the NLDC intends to collect and maintain on a continuous basis current information on the availability, costs and floor size of comparable relocation sites for displaced businesses and non-profit agencies. An explanation of the relocation services and financial payments that will be available to qualifying non-residential occupants displaced by project actions may be found in the project's Relocation Plan.

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In addition to the City's Neighborhood Investment Initiative Program, which provides affordable homeownership opportunities, a special homeownership assistance program is also being offered to households being displaced by public redevelopment programs through the Connecticut Housing Finance Authority (CHFA). CHFA provides Home Buyer Mortgages, Downpayment Assistance and/or Rehabilitation Mortgage Loans to income-eligible households. A special 1% fee reduction is available for program participants from/or in New London.

10.2.4 Rental Housing

At the time of the 1990 Census, 2,797 housing units were located in structures containing 10 or more housing units. A 1996 Inventory of Multi-Family Housing, those developments containing 10 or more units, was undertaken as part of the Plan of Conservation and Development process. The majority of the multi-family housing in the City was built during the 1960's and 1970's. Of the 3,748 units in the 1996 inventory, 1,633 (44%) were publicly subsidized in some manner and the remaining were private-market units.

In addition to the rental opportunities in large multi-family developments described above, New London also has a significant amount of rental housing units in buildings with 2 to 4 units (3,897 units) and a lesser amount in buildings of 5 to 9 units (1,326 units).

10.2.5 Rental Housing Availability

In an attempt to quantify the availability and cost of rental housing in New London and its adjacent communities of Groton and Waterford, the Real Estate Guide published by the New London Day was reviewed for a four week period from September 11, 1998 through October 2, 1998.

9.0 FINANCE AND ADMINISTRATION

9.1 Financing Plan

The implementation of this Plan is to be financed by grant funds from State programs and land disposition proceeds. The Financing Plan for this project has been prepared to reflect all sources of funds and necessary expenditures. This Financing Plan covers all activities described in this Development Plan. The Project Financing Plan and Budget have been prepared for a two-year period. This period will start upon approval of the Development Plan and Budget by the Commissioner of Economic and Community Development.

The preliminary budget figures prepared for this project estimate a project cost of $3,731,400. The State of Connecticut share of this project cost is estimated to be $3,731,400 from the Department of Economic and Community Development (DECD).

The New London Development Corporation acting as the Development Agency designated by the City of New London based upon approval of this Development Plan by the City of New London will make application to the Commissioner of Economic and Community Development on forms prescribed by said Commissioner for financial assistance in the amount of $3,731,000. The City of New London at its discretion may authorize the New London Development Corporation as the development agency to utilize any provisions of Connecticut General Statutes 22a-133m and 4-66c as well as Chapter 132 and 588l if it is found and declared that it will benefit the economic welfare of the City and as further agreed and approved by the Commissioner of Economic and Community Development.

9.2 Financial Responsibility of Redevelopers

The Redeveloper shall provide to the NLDC and City the funds as set forth in the Land Disposition Agreement. The scope of the Redeveloper's financial responsibility, as set forth in the Land Disposition Agreement, should include without limitation all costs of consultants, studies and reports, tests, appraisals, and architectural, engineering and legal services, the costs of maintaining property acquired pursuant hereto, and the construction of site works, but excluding all costs of the City and NLDC for the services and normal expenses of their officers and employees.

9.3 Administrative Plan

The NLDC shall be responsible for administering the State Pier Municipal Development Plan and Project Area, subject to the terms and conditions of and the contract for financial assistance with the Connecticut Department of Economic and Community Development and of Land Disposition Agreements that may be executed.

The duties of the NLDC will include:

1. Coordination of project management and approvals with the State of Connecticut, Departments of Economic and Community Development and Transportation.

2. Acquire the Action Area property; or cause it to be acquired by an appropriate entity.

3. Contract for asbestos removal, demolition and site preparation.

4. Relocate affected residents and businesses.

5. Contract for professional services as required to carry out project activities.

9.2 Financial Responsibility of Redeveloper

The Redeveloper shall provide to the NLDC and City the funds as set forth in the Land Disposition Agreement. The scope of the Redeveloper's financial responsibility, as set forth in the Land Disposition Agreement, should include without limitation all costs of consultants, studies and reports, tests, appraisals, and architectural, engineering and legal services, the costs of maintaining property acquired pursuant hereto, and the construction of site works, but excluding all costs of the City and NLDC for the services and normal expenses of their officers and employees.

9.3 Administrative Plan

The NLDC shall be responsible for administering the State Pier Municipal Development Plan and Project Area, subject to the terms and conditions of and the contract for financial assistance with the Connecticut Department of Economic and Community Development and of Land Disposition Agreements that may be executed.

The duties of the NLDC will include:

1. Coordination of project management and approvals with the State of Connecticut, Departments of Economic and Community Development and Transportation.

2. Acquire the Action Area property; or cause it to be acquired by an appropriate entity.

3. Contract for asbestos removal, demolition and site preparation.

4. Relocate affected residents and businesses.

5. Contract for professional services as required to carry out project activities.

6. Coordinate demolition and site preparation with the appropriate State and City agencies.

7. Solicit redeveloper interest, negotiate terms of a land disposition agreement, review proposed plans for conformance to the MDP and transfer the site to the designated redeveloper.

8. Administer appropriate financial transactions.

9. Maintain all necessary records, including relocation.

10. Provide general project management.

The above will be carried out by the New London Development Corporation staff; enhanced as needed by consulting engineers, legal counsel, etc. and temporary relocation staff and under the supervision and policy direction of the Board of Directors of the Corporation.

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10.0 JOBS AND HOUSING

10.1 Statement of Jobs To Be Created

A range of job creation estimates has been created for the development of a 150,000 square foot warehouse facility, with outdoor storage and inter-modal capabilities. Two distinct methods have been used to estimate the direct and indirect employment for the proposed State Pier facility. The Urban Land Institute methodology results in a total of 202 to 302 jobs, while the methodology employed in the 1997 Maguire study results in estimates of between 150 and 250 total jobs, depending on the level of cargo activity. The estimates for total job creation are summarized below.

TABLE 9

Estimated Indirect Job Creation
At Various Levels of Cargo Tonnage

Annual Cargo Tonnage	*ULI Method*	**300,000**	**400,000**	**500,000**
Direct Jobs	100 – 150	97	129	161
Indirect Jobs	102 – 152	53	71	89
Total Direct & Indirect	202 – 302	150	200	250
Construction Jobs (Person Years)	176	176	176	176

10.2 Determination of Impact on Housing Needs

The project described in this Development Plan will create 176 full-time equivalent site preparation and construction phase jobs as well as approximately 618 to 1,030 full-time or full-time equivalent permanent jobs upon completion. In terms of impact upon housing needs in New London, these jobs will have two different impacts. The jobs to be created during the site preparation and construction phase will be filled by either

residents of the New London area or transient workers. Given that a large number of construction period workers are already housed in the region and transient workers are permanently housed elsewhere, the impact on housing needs in New London will be minimal.

Therefore, the impact on housing needs in the New London region will be related to the permanent jobs to be created. In order to assess this impact, the following residential analysis was undertaken:

10.2.1 Housing Overview

"Despite its relatively compact size New London offers a wide diversity of housing opportunities for its residents. The City contains a significant inventory of housing stock which varies in size and price and includes: spacious, well maintained historic mansions; single-family homes; duplexes; townhouses; condominiums; apartment complexes; rooming and boarding houses; apartment hotels; group homes; and high density, high rise public housing. The City contains some of the most affordable housing in the State." Chapter 6, page 2. New London Plan of Conservation and Development.

The table which follows is comprised of statistics available from the 1990 Census of Population and Housing. It provides summary information on the number, availability and cost of owner-occupied and rental housing units in New London and the neighboring municipalities of Groton and Waterford. As appropriate, data from the City of New London's Consolidated Plan for Housing and Community Development and Plan of Conservation and Development has also been included in this analysis.

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TABLE 10
Comparative Census Statistics
New London and Adjacent Communities

	New London	Waterford	Groton
Total Number of Housing Units	11,970	7,357	16,598
Occupied Units	10,712	6,956	14,853
Vacant Units	1,258	401	1,745
% Vacant	10.5	5.4	10.5
Owner Occupied-Units	3,954	5,878	7,048
% Owner-Occupied	36.9	84.5	47.5
Renter Occupied Units	6,758	1,078	7,805
% Renter-Occupied	63.1	15.5	52.5
Overall Vacancy Rate	10.5	5.4	10.5
Vacancy Rate for Owner-Occupied	2.3	1.5	4.6
Vacancy Rate for Renter-Occupied	10.4	5.4	7.9
Median Value	$131,600	$159,700	$148,200
Median Contract Rent	$455	$570	$547

Source: 1990 U.S. Census

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TABLE 11
Housing Units by Tenure, Type & Bedroom Size
New London, CT

Renter-Occupied	
0 & 1 Bedroom	2,890
2 Bedroom	2,480
3 or more Bedroom	1,388
Owner-Occupied	
0 & 1 Bedroom	161
2 Bedroom	962
3 or more Bedroom	2,831
Vacant Units for Rent	
0 & 1 Bedroom	402
2 Bedroom	341
3 or more Bedroom	62
Vacant Units for Sale	
0 & 1 Bedroom	0
2 Bedroom	41
3 or more Bedroom	45
Other Vacant Units	
0 & 1 Bedroom	100
2 Bedroom	99
3 or more Bedroom	168

Source: U.S. Department of Housing and Community Development – Comprehensive Housing Affordability Strategy Databook

10.2.2 Ownership

As evidenced by data in the previous table, the majority of the City's residents rent housing -- 63.1% of the housing units are renter-occupied. Over the past several census

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periods, the percent of renter-occupied housing has increased. In 1970, 58.6% of all occupied housing units were renter-occupied, increasing to 62.5% in 1980. As outlined in the City's Plan of Conservation and Development, this trend of increasing number of renter-occupied units highlights the current imbalance between owner and renter housing. According to the Plan, these figures identify the "need to develop strategies and programs to allow opportunities for more residents to attain homeownership thereby improving the balance in the housing stock." Current programs and strategies to improve homeownership opportunities are discussed in a later section.

10.2.3 Home Ownership

At the time of the 1990 Census, 31.3% (3,751) of the City's housing stock was comprised of single-family units. This percentage is comparatively lower than all of the other municipalities in the New London region. Single-family homes comprised 56.5% of Groton's and 57.4% of Waterford's housing stock. Of the 3,751 single-family housing units in New London, 3,387 were single-family detached units and 364 were single-family attached (generally condominium-type units). The following table depicts the housing units by structure type statistics from 1990. The number of 2 to 4 unit structures in New London provides the opportunity to combine homeownership with rental income availability. This configuration, wherein the homeowner can offset costs with rental income from tenants in other units within the structure, is a common configuration for affordable housing programs.

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TABLE 12
Dwelling Units by Structure

	New London	Waterford	Groton
Units in Structure			
1-Unit, Detached	3,387	6,359	7,509
1-Unit, Attached	364	148	2,012
2 to 4 Units	3,897	414	2,755
5 to 9 Units	1,326	150	1,146
10 or More Units	2,797	73	2,215
Mobile Home, Trailer, Other	199	213	961
	11,970	7,357	16,598

Source: 1990 U.S. Census

As a means to reverse the declining trend in home ownership in the City and to ensure long-term housing affordability, the City has established a program whereby deteriorating properties are purchased and rehabilitated and then sold to low- and moderate- income families. Property deeds contain resale restrictions on the price or give the right of first refusal to the City or a trust, which in turn would sell it to another low-moderate income family.

In 1993, the City initiated a purchase and rehabilitation program which has resulted in the reconstruction of several homes. At the time of this report, four homes (3 single-family and 1 duplex) are currently available through the New London Neighborhood Investment Initiative Program. These homes are being sold for between $62,000 and $80,000. Homes are sold to income-qualified owners (80% of New London Area Median Income) in move-in condition. They have been renovated to meet housing and building code standards as well as local lead-safe standards.

Three additional properties are currently underway as part of the Neighborhood Investment Initiative Program. All three of these units contain at least one rental unit.

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In addition to the City's Neighborhood Investment Initiative Program, which provides affordable homeownership opportunities, a special homeownership assistance program is also being offered to households being displaced by public redevelopment programs through the Connecticut Housing Finance Authority (CHFA). CHFA provides Home Buyer Mortgages, Downpayment Assistance and/or Rehabilitation Mortgage Loans to income-eligible households. A special ¼% fee reduction is available for program participants from/or in New London.

10.2.4 Rental Housing

At the time of the 1990 Census, 2,797 housing units were located in structures containing 10 or more housing units. A 1996 Inventory of Multi-Family Housing, those developments containing 10 or more units, was undertaken as part of the Plan of Conservation and Development process. The majority of the multi-family housing in the City was built during the 1960's and 1970's. Of the 3,748 units in the 1996 inventory, 1,633 (44%) were publicly subsidized in some manner and the remaining were private-market units.

In addition to the rental opportunities in large multi-family developments described above, New London also has a significant amount of rental housing units in buildings with 2 to 4 units (3,897 units) and a lesser amount in buildings of 5 to 9 units (1,326 units).

10.2.5 Rental Housing Availability

In an attempt to quantify the availability and cost of rental housing in New London and its adjacent communities of Groton and Waterford, the Real Estate Guide published by the New London Day was reviewed for a four week period from September 11, 1998 through October 2, 1998.

According to the real estate listings, the average cost for a one-bedroom apartment in New London was just over $500. One-bedroom units in Groton averaged $550 and $600. Only a limited amount of apartments were listed in Waterford. Of those listed, rents ranged between $500 - $600 for a one-bedroom. Rents for two-bedroom units averaged $589 to $600 in New London and $629 to $670 in Groton. Rents for two-bedroom units in Waterford ranged between $600 and $700. Based upon the sample analyzed, rents in Groton were typically $50 more per month than New London rents for similar sized units.

In an average weekly listing, between 15 and 20 one-bedroom units were listed for rent; 10 to 15 two-bedroom units were listed; 5 three-bedroom units were listed; and 5 studio/efficiency units were listed for rent in New London. In addition, the larger apartment complexes in the area advertised unit availability without providing unit characteristics.

The U.S. Department of Housing and Urban Development published the 40th Percentile Fair Market Rents for Existing Housing based upon survey data. The monthly fair market rents for the New London-Norwich MSA as of October 1, 1998 are $491 for an efficiency unit; $594 for a one-bedroom; $723 for a two-bedroom; $905 for a three-bedroom; and $1,034 for a four-bedroom. These rents include utilities.

10.2.6 Ownership Housing Availability

Since 1990, the City of New London has experienced very little new housing construction. In fact, over the past several years, demolition of substandard and deteriorated properties has offset any true net gains in dwelling units. Due to the lack of developable land for residential purposes in the City, the majority of new housing units brought to the market have been renovated units in existing structures.

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TABLE 13
Housing Units Authorized
New Construction

	1990	1991	1992	1993	1994	1995	1996	1997
New London	16	5	11	3	1	2	0	0
Waterford	37	42	42	58	110	89	157	79
Groton	52	46	121	59	71	40	74	82

Source: State of Connecticut Department of Economic and Community Development

Through October 1998, according to the Southeastern Connecticut Board of Realtors Multiple Listing Service, 321 residential properties were sold in New London at an average selling price of $89,900. Over the period, 405 homes were sold in Waterford and 527 homes were sold in Groton. Average selling prices in Waterford and Groton were slightly higher than New London's sales prices at $117,000 and $127,900 respectively.

Recent residential sales data for New London, as provided by Commercial Record for New London, Groton, Waterford and all of New London County are shown in the following table. Over the past five years, New London averaged 275 sales per year with median sales prices in the $75,000 - $80,000 range.

TABLE 14
Residential Sales Data
New London, Waterford, Groton
and New London County
1993 - 1997

	1993	1994	1995	1996	1997
New London					
# of Sales	209	253	298	286	346
Median Sales Price	$80,000	$75,000	$80,000	$82,000	$74,000
Waterford					
# of Sales	291	320	323	365	404
Median Sales Price	$115,000	$109,900	$109,000	$112,500	$111,100
Groton					
# of Sales	380	458	489	490	531
Median Sales Price	$112,000	$107,000	$108,000	$109,000	$116,500
New London County					
# of Sales	3,438	3,951	3,935	3,983	4,494
Median Sales Price	$109,000	$109,000	$105,000	$105,000	$110,000

Source: Commercial Record

In terms of residential listings, as of September 1998, New London had 106 active listings, Waterford had 154 and Groton had 220. Average list prices for the three communities are $104,000, $168,100 and $194,000. Year-end 1998 statistics show active listings in New London at 152 (89 single and 63 multi-family). A review of published real estate listings in New London showed nineteen (19) single-family homes and ten (10) condominiums for sale between $70,000 and $90,000 and twenty (20) homes for sale between $90,000 and $100,000.

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10.2.7 Conclusion

Based upon the amount of housing available in New London and its region and that some of the jobs to be created both in the short term and the long term will be filled by people already residing in the New London area, it is concluded that there is an adequate housing inventory available to accommodate new workers attracted to jobs in the State Pier MDP.

In addition, the New London Development Corporation has established a goal of creating 300+ dwelling units in and adjoining Downtown New London that target new employees at the Pfizer Global Development Facility and at the State Pier MDP area. This new housing initiative will further expand the housing stock over the next few years and be available to new workers attracted to jobs in the State Pier MDP area.

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11.0 DETERMINATION OF FINDINGS AND RELATION OF PLAN TO LOCAL OBJECTIVES

The Action Area has been an important element in the economic base of New London since at least the mid 1800's. Its contributions to the community's tax and job bases have fluctuated over the years, with the 1980's and 1990's experiencing minimal job generation from the site due to cessation of US Naval operations and closure of the State Pier as an operating port facility. In addition, the existing buildings have extremely limited reuse potential according to today's standards. The strength of the Action Area lies in its location, adjacent to I-95 with railroad and port access. These assets provide a new role for the Action Area through private investment to create port support buildings.

The objective of this Development Plan is to provide public assistance to address site preparation/development costs associated with the Action Area. By final approval of this Development Plan, the NLDC shall expressly adopt and affirm the following findings:

a. The land and buildings within the boundaries of the Action Area will be used principally for port-related business purposes;

b. The Development Plan is in accordance with the intent of the Plan of Conservation and Development for New London, adopted by its Planning and Zoning Commission, and the plan of development of the regional planning agency for the region within which the municipality is located;

c. The Development Plan is not inimical to any statewide planning program objectives of the state or state agencies as coordinated by the Secretary of the Office of Policy and Management;

d. The Project will contribute to the economic welfare of the municipality and the state; and

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d. The Project will contribute to the economic welfare of the municipality and the state; and

e. To carry out and administer the project, public action under Connecticut General Statutes Chapter 132 and 588l is required.

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12.0 STATEMENT OF MINORITY PARTICIPATION

The New London Development Corporation (NLDC) has established the attached Statement on Minority Participation and a Program for Affirmative Action. This Statement and Program are applicable to all development activities to be administered by NLDC as described elsewhere in this Plan. The performance standard for minority and female participation expressed in percentage terms of the total person-days of on-site labor on all project activities administered by NLDC is as follows:

Minority Participation	10%
Female Participation	3%

In addition, set aside goals for participation in contracts awarded are 10% of construction costs for Disadvantaged Business Enterprises (DBE) and 4% of construction costs for Women Business Enterprises (WBE). Maximum practicable efforts are required to be made to achieve these goals.

Language which includes Plan provisions will be incorporated in all contracts related to execution of activities to be administered by NLDC. All contractors must prepare and submit a Contractors Minority Business Enterprises Utilization Form and comply with the provisions of Section 4a-60(a) - (e) of the Connecticut General Statutes. NLDC will monitor compliance with these goals and will report as applicable to the Department of Economic and Community Development.

12.1 Project Purpose

12.1.1. Economic Development

The State Pier Project is a municipal development project. The purpose of the Development Plan for the project is to redevelop the Action Area through acquisition and redevelopment activities.

The goals for the State Pier area have been stated as follows:

1. To improve the efficiency of port operations at State Pier in order to maximize thru-put and resultant economic activity for the City and region.
2. To create an economic asset for the City of New London and its region that will create jobs, generate tax revenue, and result in spin-off economic activity.

Property within the Action Area is to be assembled and fully integrated into the operation of State Pier. The remainder of the property within the Project Area is anticipated to be improved and developed through the stimulus of heightened economic activity at the port facility.

12.1.2. Job Creation

The activities proposed in the Development Plan will create between ___ and ___ jobs during the construction period.

12.1.3. Affirmative Action

The State Pier Project is funded under the provision of Connecticut General Statutes, Chapter 132. With the retention and/or creation of jobs explicit standards of affirmative action and equal opportunity, they will be implemented in the redevelopment activities.

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12.2 Minority Participation

12.2.1 Commitment

Essential to the focus on job retention and creation is a commitment by the NLDC to real and significant minority participation in the project during the construction stage.

12.2.2. Performance Standard

Pursuant to the terms and conditions of the state grant-in-aid for the project, a minority participation performance standard of 10% and a women participation standard of 3% of the total person-days of on-site labor have been established. In addition, set aside goals for participation in contracts awarded are 10% of construction costs for Disadvantaged Business Enterprises (DBE) and 4% of construction costs for Women Business Enterprises (WBE).

12.2.3. Government Requirements

The State of Connecticut acting through the Department of Economic and Community Development and the Commission on Human Rights and Opportunities has mandated the above performance standard for this project as a standard generally reflective of the regions minority population.

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Essential to the focus on job retention and creation is a commitment by the NLDC to real and significant minority participation in the project during the construction stage.

12.2.2 Performance Standard

Pursuant to the terms and conditions of the state grant-in-aid for the project, a minority participation performance standard of 10% and a women participation standard of 3% of the total person-days of on-site labor have been established. In addition, set aside goals for participation in contracts awarded are 10% of construction costs for Disadvantaged Business Enterprises (DBE) and 4% of construction costs for Women Business Enterprises (WBE).

12.2.3 Government Requirements

The State of Connecticut acting through the Department of Economic and Community Development and the Commission on Human Rights and Opportunities has mandated the above performance standard for this project as a standard generally reflective of the regions minority population.

12.3 Area of Minority Participation

12.3.1 Construction Employment (Equal Employment Opportunity)

In accordance with the project's minority and women participation standard, the New London Development Corporation shall require contractors and subcontractors to hire minority and women construction workers in constructing this project.

12.3.1.1. Minority Construction Workers Defined

Minorities for this area of participation are citizens of the United States who are Black, Hispanic, Asian, Native American, Eskimo or Aleutian.

12.3.1.2. Implementation Method

a. Prequalification of Bidders

Due to the highly specialized nature of the activities to be undertaken, a process of prequalification of bidders will be used. As part of this process, all prospective bidders will be informed of the minority and women employment standards contained in this Statement. In addition, information as to a company's current minority employment status and plans for future employment will be requested.

b. Bid Advertisement

Announcements inviting contract bids will advise candidates as to the following:

12.3 Area of Minority Participation

12.3.1 Construction Employment (Equal Employment Opportunity)

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b. Bid Advertisement

Announcements inviting contract bids will advise candidates as to the following:

i. The participation of minority and women construction workers is an integral part of the project plan, required by the terms and conditions of any federal and state grants-in-aid for constructing the project.

ii. The performance standard for minority and women construction workers for the project is 10% and 3%, respectively, of the total person-days of on-site labor required to complete project activities.

iii. Ability and willingness to meet the project's minority and women construction workers performance standards.

c. Alerting Minority and Women Construction Workers

On the same day the project is advertised publicly for prime contract bid, the NLDC shall alert governmental and social service agencies as to the public works nature of the project, the minority and women hiring requirements to be followed by the contractors and subcontractors engaged to construct the project, and the upcoming availability for construction worker jobs. The agencies to be contacted will be included on a list to be assembled by NLDC specifically for this project. This list may include but not be limited to:

- Connecticut Dept. of Labor- Employment Service Job Center
- Regional Workforce Development Board
- Connecticut Minority Purchasing Council
- NAACP - Local Chapter
- National Association of Women in Construction
- Building Trade Unions

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iii. Ability and willingness to meet the project's minority and women construction workers performance standards.

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- Connecticut Dept. of Labor- Employment Service Job Center
- Regional Workforce Development Board
- Connecticut Minority Purchasing Council
- NAACP - Local Chapter
- National Association of Women in Construction
- Building Trade Unions

- Women's Employment Resource Centers
- Minority Business Centers
- Small Business Development Centers
- New London Office of Development and Planning
- Alpha Development Group
- Centro de la Comunidad
- OIC of New London County
- Organizations such as churches, synagogues, service clubs, lodges, social clubs, neighborhood clubs, etc. which can be identified as potential sources of outreach to minority and women construction workers.

Directly upon the award of the prime contract to a general contractor, NLDC shall apprise the above-named organizations of the project and other pertinent information as to how qualified candidates may present themselves for consideration for employment.

12.3.1.3 Reporting System

By the fifth day of each month, the prime contractor shall be required to furnish the NLDC a manpower utilization report, listing the names, addresses, job descriptions, number of hours worked, and racial and ethnic background of all those who worked on the project for them in the previous month, and such other information and in such form, as the NLDC shall deem appropriate. By the 15th day of each month, the NLDC shall file a statement on construction manpower utilization, with prior verification thereof by construction contractor on-the-job representative, with the Connecticut Department of Economic and Community Development, which report shall summarize the project's actual minority

- Women's Employment Resource Centers
- Minority Business Centers
- Small Business Development Centers
- New London Office of Development and Planning
- Alpha Development Group
- Centro de la Comunidad
- OIC of New London County
- Organizations such as churches, synagogues, service clubs, lodges, social clubs, neighborhood clubs, etc. which can be identified as potential sources of outreach to minority and women construction workers.

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and women construction workers participation performance in relation to stated standards.

12.3.1.4. Impartial Monitoring

The NLDC shall enlist the services of a competent and impartial monitoring entity to assist in implementing this Minority Participation Statement by doing the following:

a. Monitor compliance with the project's minority and women construction workers participation standard by visiting the construction site and communicating its observations to the NLDC.

b. Attest to the validity of statements made by the NLDC and contractors to the agencies of federal and state governments regarding the project's actual minority and women participation performance in relation to its stated performance standard.

12.3.2. Construction Subcontracts (Disadvantaged Business Enterprise)

This Affirmative Action Plan establishes goals for participation in construction subcontracts by Disadvantaged Business Enterprises (DBE). This goal has been established at 10% of the total value of the on-site labor costs. This goal does not impact on the construction employment standards included in Section A. This goal does not represent a mandatory performance standard.

12.3.2.1. Disadvantaged Business Enterprise Defined

a. Private Ownership

A privately owned disadvantaged business enterprise is one in which at least 50% of the stock is owned by minority group members, 50% of the profits of which accrue to the minority group owners and a minimum of 10% of the work force are minority.

b. Public Ownership

A publicly owned minority business is one in which at least 51% of the profits of which accrue to the minority group stock owners and a minimum of 10% of the work force are minority.

12.3.3 Construction Subcontracts (Women Business Enterprise)

A goal for participation in construction subcontracts by Women Business Enterprises has been established at 4% of the total value of the on-site labor costs. This goal does not impact on the construction employment standards included in Section A. This goal does not represent a mandatory performance standard.

12.3.3.1. Women-Owned Enterprise Defined

a. Private Ownership

A privately women-owned business enterprise is one in which at least 50% of the stock is owned by female group members, 50% of the profits of which accrue to the female group owners and a minimum of 10% of the work force are women.

b. Public Ownership

A publicly women owned business is one in which at least 51% of the stock of which is owned by female group members, 51% of the profits of which accrue to the female group stock owners, and minimum of 10% of the work force are women.

12.3.4. Implementation Method (Construction Subcontracts)

12.3.4.1. Prequalification

As part of the prequalification process for bidders, all contractors will be made aware of the goals for DBE and WBE subcontract participation. Information will be requested as to how the firm will attempt to meet the established sub-contract goals. Also as part of this process, potential DBE and WBE subcontractors will be solicited for inclusion on the bidder's list. These DBE and WBE firms will be asked to provide evidence as to the source of their certification.

12.3.4.2. Bid Advertisement

Announcements inviting contract bids will advise potential bidders as to the following:

a. The participation of minorities and women is an integral part of the project plan, required by the terms and conditions of applicable federal and state grant-in-aids for constructing the project.

b. The DBE participation goal and WBE participation goal for the project is 10% and 4%, respectively, of the total dollar value of on-site labor costs.

b. Public Ownership

A publicly women owned business is one in which at least 51% of the stock of which is owned by female group members, 51% of the profits of which accrue to the female group stock owners, and minimum of 10% of the work force are women.

12.3.4 Implementation Method (Construction Subcontracts)

12.3.4.1. Prequalification

As part of the prequalification process for bidders, all contractors will be made aware of the goals for DBE and WBE subcontract participation. Information will be requested as to how the firm will attempt to meet the established sub-contract goals. Also as part of this process, potential DBE and WBE subcontractors will be solicited for inclusion on the bidder's list. These DBE and WBE firms will be asked to provide evidence as to the source of their certification.

12.3.4.2. Bid Advertisement

Announcements inviting contract bids will advise potential bidders as to the following:

a. The participation of minorities and women is an integral part of the project plan, required by the terms and conditions of applicable federal and state grant-in-aids for constructing the project.

b. The DBE participation goal and WBE participation goal for the project is 10% and 4%, respectively, of the total dollar value of on-site labor costs.

c. Ability and willingness to meet this project's 10% DBE and 4% WBE is a significant bidding qualification for prime contract bidders.

d. Each prime contract bidder shall submit as part of this bid package a sufficient breakdown of on-site labor costs for each division of work and for each subcontract intended to be given by such contract bidder, to include the name and minority and women participation of each such sub-contractor.

12.3.4.3. Impartial Monitoring

The NLDC shall enlist the services and assistance of the Office of Development and Planning, local Building Trade Unions, and local employment and business development agencies, in consultation with the Connecticut Department of Economic Development and Small Business Administration to assist in implementing this Minority Participation Statement by doing the following:

a. Attest to the validity of statements made by the NLDC to the agencies of state government regarding the project's actual minority and women participation performance in relation to its stated goal.

b. Notify minority and women subcontractors of the project.

c. Endorse minority and women subcontractors to qualify for participation in the bid competition.

d. Assist minority and women subcontractors to secure bid and performance bonds and financing.

c. Ability and willingness to meet this project's 10% DBE and 4% WBE is a significant bidding qualification for prime contract bidders.

d. Each prime contract bidder shall submit as part of this bid package a sufficient breakdown of on-site labor costs for each division of work and for each subcontract intended to be given by such contract bidder, to include the name and minority and women participation of each such sub-contractor.

12.3.4.3. Impartial Monitoring

The NLDC shall enlist the services and assistance of the Office of Development and Planning, local Building Trade Unions, and local employment and business development agencies, in consultation with the Connecticut Department of Economic Development and Small Business Administration to assist in implementing this Minority Participation Statement by doing the following:

a. Attest to the validity of statements made by the NLDC to the agencies of state government regarding the project's actual minority and women participation performance in relation to its stated goal.

b. Notify minority and women subcontractors of the project.

c. Endorse minority and women subcontractors to qualify for participation in the bid competition.

d. Assist minority and women subcontractors to secure bid and performance bonds and financing.

12.3.1 Reporting System

By the fifth day after the award of the prime contract, and on the fifteenth day after the beginning of each calendar quarter thereafter, the NLDC, with prior verification thereof by construction contractors on-the-job representative, shall file a statement with the Connecticut Department of Economic and Community Development summarizing the project's actual DBE and WBE participation in relation to stated goals.

12.4 Penalties

Based upon the reports filed by contractors and reviewed by NLDC, a failure by contractors to meet the mandatory performance standards will result in a forfeiture without legal recourse by the contractor of $10,000 for each percentage point below the minority and women employment standard established in the contract.

12.5 Responsibility

By form of this Statement on Minority Participation, bidders for prime contract, subcontracts, and subcontractors are served notice that in order to qualify as responsible bidders for award and of performance of any contract attendant to the construction work for the Project, they must be willing and able to strive for the project's Performance Standard and goals established herein.

13.0 PROVISION FOR MODIFICATION AND TERMINATION

13.1 Modification

In accordance with the General Statutes of the State of Connecticut, this Plan may be modified at any time by the NLDC, provided, if modified after the lease or sale of disposition parcels in the Action Area, the modification must be consented to by the Redeveloper or Redevelopers of such real property or its successor or their successors in interest as are affected by the proposed modification. Where the proposed modification will substantially change this Plan as previously approved by the City Council, the modification must similarly be approved by the City Council and the Commissioner of the Department of Economic and Community Development.

13.2 Termination

This Plan and/or any modification hereof shall be in full force and effect for a period of thirty (30) years from the date of first approval of this Plan by the City Council of the City of New London. The termination of this Plan under this provision shall not affect the provisions herein prohibiting discrimination.

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14.0 COMPLIANCE WITH STATUTORY PLAN REQUIREMENTS

14.1 Statutory Plan Requirements

Authority to initiate and take actions required to implement this Plan is provided under Chapter 132 and 5881 of the General Statutes, as amended. The Chapter lists the required contents of a plan adopted pursuant to its provisions. The relevant requirements for Municipal Development Projects and Economic Development and Manufacturing Assistance, are recited below:

14.2 Chapter 132, Municipal Development Projects

The project plan shall include: (a) A legal description of the land within the Project Area; (b) a description of the present condition and uses of such land or buildings; (c) a description of the types and locations of land uses or building uses proposed for the Project Area; (d) a description of the types and locations of present and proposed streets, sidewalks and sanitary, utility and other facilities and the types of locations of the other proposed site improvements; (e) statements of the present proposed zoning classification and subdivision status of the Project Area and the areas adjacent to the Project Area; (f) a plan for relocating project-area occupants; (g) a financing plan; (h) an administrative plan; (i) a marketability and proposed land-use study or building use study if required by the Commissioner; (j) appraisal reports and title searches; (k) a statement of the number of jobs which the development agency anticipates would be created by the project and the number and types of existing housing units in the municipality in which the project would be located, and in contiguous municipalities, which would be available to employees filling such jobs and (1) findings that the land and buildings within the Project Area will be used principally for industrial or business purposes; that the plan is in accordance with the plan of development for the municipality adopted by its planning commission and the plan of development of the regional planning agency, if any, for the region within which the municipality is located; that the plan is not inimical to any statewide planning

program objectives of the state or state agencies as coordinated by the Secretary of the Office of Policy and Management; that the project will contribute to the economic welfare of the municipality and the state; and that to carry out and administer the project, public action under this chapter is required.

This Plan conforms with these requirements.

14.3 Chapter 588l. Economic Development and Manufacturing Assistance

Section 32-224(b) of the Connecticut General Statutes provides that: Such plan shall include: (1) A legal description of the real property within the boundaries of the Project Area; (2) a description of the present condition and uses of such real property; (3) a description of the types and locations of land uses or building uses proposed for the Project Area; (4) a description of the types and locations of present and proposed streets, sidewalks and sanitary, utility and other facilities and the types and locations of other proposed project improvements; (5) statements of the present and proposed zoning classification and subdivision status of the Project Area and the areas adjacent to the Project Area (6) a plan for relocating Project Area occupants; (7) a financing plan; (8) an administrative plan; (9) an environmental analysis, marketability and proposed land use study, or building use study if required by the commissioner; (10) appraisal reports and title searches if required by the Commissioner; (11) a description of the economic benefit of the project, including the number of jobs which the implementing agency anticipates would be created or retained by the project, estimated property tax benefits and the number and types of existing housing units in the municipality in which the project would be located, and in contiguous municipalities, which would be available to employees filling such jobs and (12) a finding that (A) the land and buildings within the boundaries of the Project Area will be used principally for manufacturing or other economic base business purposes or business support services; (B) the plan is in accordance with the plan of development for the municipality, if any, adopted by its planning commission and the plan of development of the regional planning agency, if any for the region within

program objectives of the state or state agencies as coordinated by the Secretary of the Office of Policy and Management; that the project will contribute to the economic welfare of the municipality and the state; and that to carry out and administer the project, public action under this chapter is required.

This Plan conforms with these requirements.

14.3 Chapter 588l, Economic Development and Manufacturing Assistance

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which the municipality is located; (C) the plan is not inimical to any statewide planning program objectives of the state or state agencies as coordinated by the Secretary of the Office of Policy and Management; and (D) the project will contribute to the economic welfare of the municipality and the state and that to carry out and administer the project, public action under Sections 32-220 to 32-234, inclusive, is required.

This Plan conforms with these requirements.

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15.0 SEVERABILITY OF PROVISIONS OF THIS PLAN

15.1 Severability

In the event that any phrase, clause, sentence, paragraph, provision or section of this Plan is held to be illegal, unconstitutional or otherwise unenforceable by the valid judgement or decree of any court, such illegality or unconstitutionality shall not affect the validity of any of the remaining parts of this Plan.

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APPENDIX A

STATE PIER MDP STUDY AREA
PROPERTY CHARACTERISTICS

Appendix A
Table 1

ADDRESS	MAP	BLOCK	PARCEL	OWNER	OWNER OCCUPIED	PROPERTY TYPE	Number of Dwelling Units	TOTAL NUMBER OF HOUSEHOLDS	TOTAL NUMBER OF BUSINESSES	NUMBER OF BUILDINGS	BUILDING TYPE	ROOF TYPE	BUILDING HEIGHT	YEARBUILT	LAND AREA	TOTAL BLDG SF	LIVING SPACE SF	BUILDING AREA	NON-RESIDENTIAL?	ZONING
Vater Street	37	108	1D	Yankee Gas Services Company	N	Industrial	0	0	1	1	Warehouse/Service	Gable	1	1964	52272	2404		2404	Y	WD
Lot 3 Water Street	37	245	3	Central Vermont Railway c/o T. Faucett	N	Industrial	0	0	1	1	Office Building	Gable	2	1920				1980	Y	WD
Lot 0	38	0	0	State of CT	N	Vacant Land	0	0	0	0			0	0	20000			0	Y	
Winthrop Street	38	237	0	City of New London	N	Vacant Land	0	0	0	0			0	0	43560			0	Y	CBD
Lot 1 Crystal Avenue	38	237	1	City of New London	N	Vacant Land	0	0	0	0			0	0	179903			0	Y	LIO
Lot 3 Winthrop Street	38	237	3	KR Investors Inc.	N	Vacant Land	0	0	0	0			0	0	43560			0	Y	LIO
5 Thomas Griffin	38	237	5	KR Investors Inc.	N	Office/R&D	0	0	1	1	Office	Flat	1	1981	63162	15060		15060	Y	
44 Twelfth Street	38	238	1	State of CT/ DOT	N	State Use Office	0	0	0	0	Concrete	Gable	1	1974	19880	5630		2815	Y	WCI
3 Tenth Street	38	239	1	Hayes, Leon W.	Y	Two Family	2		0	1	Family Conversion	Gable	2	1890	2600	2285		840	N	WCI
5 Tenth Street	38	239	2	Beasley, Elbert & Cora L.	Y	Two Family	2		0	1	Family Conversion	Gable	2	1890	3700	2890		1040	N	WCI
38 Twelfth Street	38	239	3	Hayes, Slyvester	N	Two Family	2		0	1	Family Conversion	Gable	2	1890	8050	2051		1267	N	WCI
4 Twelfth Street	38	239	4	Hayes, Valerie O.	N	Comm/Res - Vacant	0	0	0	1	Family Conversion	Gable	2	1890	4800	4238		1214	N	WCI
BL 239 Lot5 Twelfth Street	38	239	5	Hayes, Leon	N	Parking Lot	0	0	0	1	Out Buildings		0	0	5355			0	Y	WCI
29 Eighth Street	38	240	1	Hernandez, Alex W. & Linares Maria M.	Y	Two Family	2		0	1	Family Conversion	Gable	2	1890	3800	3284		908	N	WCI
3 Eighth Street	38	240	2	City of New London	N	Single Family	1		0	1	Conventional Res	Gable	2	1890	3710	3232	1584	856	N	WCI
28 Fraser Street	38	240	3	Jennette, Frank L. & Beatrice L.	N	Two Family	2		0	1	Family Conversion	Gable	2	1890	2850	3168		792	N	WCI
24 Fraser Street	38	240	4	Phung, Muoit & Loan Tu	Y	Two Family	2		0	1	Family Conversion	Gable	2	1890	2550	3496		904	N	WCI
2 Tenth Street	38	240	5	Edwards, Joseph	N	Two Family	2		0	1	Conventional Res	Gable	2	1890	3264	3268		892	N	WCI
78 Tenth Street	38	240	6	Owens, Lela V.	Y	Single Family	1		0	1	Conventional	Gable	2	1890	4500	2442		902	N	WCI
74 Tenth Street	38	240	7	Richard, Wayne M. & Diane	Y	Two Family	2		0	1	Family Conversion	Gable	2	1890	4080	3092		848	N	WCI
Lot 1 Tenth Street	38	241	1	State of CT	N	Vacant Land	0	0	0	0			0	0	33246			0	Y	WCI
Lot 2 Sixteenth Street	38	241	2	State of CT/ DOT	N	Vacant Land	0	0	0	0			0	0	9100			0	Y	WCI
45 Fourth Street	38	244	12	Central Vermont RR	Y	Comm/Warehouse	0	0	1	1	Warehouse/Office	Irregular	0	1900	1174377	13000		8500	Y	WCI
Lot 13 Lewis Street	38	244	13	City of New London	Y	Municipal Garage	0	0	1	1	Warehouse/Service	Flat	0	1978	74923	36704		36704	Y	WCI
91 Crystal Avenue	38	244	14	Church Towers Partnership	N	Comm/Warehouse	0	0	1	1	Warehouse/Industrail	Flat	1	1965	68824	31500		26625	Y	CI
41 Fourth Street	38	244	16	Scott, Mark J. & Paul T.	Y	Store/shop	0		1	1	Industrial	Flat	1	1965	15980	3416		3146	Y	CI
75 Crystal Avenue	38	244	18	Crystal Palace LLC	N	Factory/Industrial	0	0	1	1	Industrial/Warehouse	Flat	1	1965	89733	35500		35500	Y	CI
61 Crystal Avenue	38	244	19	Levin, Arnold & Lewis	Y	Comm/Warehouse	0	0	1	1	Industrial/Warehouse	Flat	1	1965	35916	16632		16632	Y	CI
49 Crystal Avenue	38	244	20	Hauser, Robert G.	N	Comm/Warehouse	0	0		0	Industrial/Warehouse	Flat	1	1969	9392	5500		5500	Y	CI
5 State Pier Road	38	244	22	Ceravolo, Dominick D.	N	Auto Repair	0	0	1	1	Industrial/Warehouse	Flat	2	1964	19621	5528		5120	Y	CI
Lot 24 State Pier Road	38	244	24	Central Vermont RR Inc.	N	Vacant Land	0	0	0	0			0	0	5000			0	Y	WCI
101 Sixteenth Street	38	245	10	State of CT/DOT	N	Vacant Land	0	0	0	0			0	0	73616			0	Y	LIO
Lot 2 Winthrop Street	38	245	2	City of New London	N	Vacant Municipal	0	0	0	1	Accessory Building		0	0	304920				Y	WCI
Lot 3A Water Street	38	245	3A	Admiralty Group LTD	N	Vacant Land/Tank	0	0	0	1	Accessory Bldg/Tank		0	0	559310					

STATE PIER MDP STUDY AREA
PROPERTY CHARACTERISTICS

ADDRESS	MAP	BLOCK	PARCEL	OWNER	YEARBUILT	OCCUPIED	PROPERTY TYPE	Number of Dwelling Units	TOTAL ASSESSED VALUE
Water Street	37	105	1D	Yankee Gas Services Company	1964	N	Industrial	0	0
Lot 3 Water Street	37	245	3	Central Vermont Railway c/o T. Fanning		N	Industrial	0	0
Lot 0	38	0	0	State of CT	0	N	Vacant Land	0	0
Winthrop Street	38	237	0	City of New London	0	N	Vacant Land	0	0
Lot 1 Crystal Avenue	38	237	1	City of New London	0	N	Vacant Land	0	0
Lot 2 Winthrop Street	38	237	3	KR Investors Inc.		N	Vacant Land	0	0
5 Thomas Griffin	38	237	5	KR Investors Inc.		N	Office Bldg	0	0
44 Twelfth Street	38	238	1	State of CT/DOT		N	State Use Office	0	0
3 Tenth Street	38	239	1	Hayes, Leon W.		Y	Two Family	2	1
5 Tenth Street	38	239	2	Beasley, Elbert & Otha L.		Y	Two Family	2	2
38 Twelfth Street	38	239	3	Hayes, Slyvester		N	Two Family	2	2
4 Twelfth Street	38	239	4	Hayes, Valerie O.		N	Commercial - Vacant	0	0
Lot 239 Lots Twelfth Street	38	239	5	Hayes, Leon		N	Parking Lot	0	0
29 Eighth Street	38	240	1	Hernandez, Alex W. & Luanne Marie M.		Y	Two Family	2	2
13 Eighth Street	38	240	2	City of New London		N	Single Family	1	1
23 Fraser Street	38	240	3	Leonette, Frank L. & Beatrice L.		N	Two Family	2	2
24 Fraser Street	38	240	4	Young, Mount & Lucas Tr		Y	Two Family	2	2
2 Tenth Street	38	240	5	Edwards, Joseph		N	Two Family	2	2
18 Tenth Street	38	240	6	Owens, Lela V.		Y	Single Family	1	1
24 Tenth Street	38	240	7	Richard, Wayne M. & Joyce		Y	Two Family	2	2
Lot 1 Tenth Street	38	241	1	State of CT		N	Vacant Land	0	0
Lot 2 Sixteenth Street	38	241	2	State of CT/DOT		N	Vacant Land	0	0
5 Fourth Street	38	244	12	Central Vermont RR		Y	Transportation	0	0
13 Lewis Street	38	244	13	City of New London		Y	Municipal Service	0	0
91 Crystal Avenue	38	244	14	Church Towers Partnership		N	Community Facilities	0	0
Fourth Street	38	244	15	Scott, Mark L. & Paul T.		Y	Single Family	1	1
5 Crystal Avenue	38	244	18	Crystal Palace LLC		N	Parking Garage	0	0
61 Crystal Avenue	38	244	19	Levin, Arnold & Lucia		Y	Condominiums	0	0
Crystal Avenue	38	244	20	Hauser, Robert G.	1964	N	Commercial Warehouse	0	0
2 State Pier Road	38	244	22	Ciravolo, Dominick D.	1964	N	Industrial	0	0
Lot 24 State Pier Road	38	244	24	Central Vermont RR Inc.	0	N	Vacant Land	0	0
91 Sixteenth Street	38	245	10	State of CT/DOT	0	N	Vacant Land	0	0
Lot 2 Winthrop Street	38	245	2	City of New London	0	N	Vacant Municipal	0	0
Lot 3A Water Street	38	245	3A	Admiralty Group LLC	0	N	Vacant Land/Tank	0	0

ot 4 State Pier Road	38	245	4	State of CT	N	State Owned	0	0	0	6	Warehouse		1	1916	435600	265360		265360	Y	WCI
Lot 5 Twelfth Street	38	245	5	State of CT	N	Commuter Line	0	0	0	0	None		0	0	63162			0	Y	WCI
3 Twelfth Street	38	245	6	Jordan, Robert	N	Two Family	2		0	1	Family Conversion	Gable	2	1890	9256	4068		1244	N	WCI
9 Twelfth Street	38	245	7	Torres, Gilberto G. & Hortencia	Y	Single Family	1		0	1	Residential	Gable	2	1890	8631	1832		792	N	WCI
54 Sixteenth Street	38	245	8	Hargrove, Dorothy	Y	Two Family	2		0	1	Family Conversion	Gable	2	1890	3150	3368		1040	N	WCI
ot 9 Sixteenth Street	38	245	9	State of CT	N	Vacant Land	0	0	0	0			0	0	26235			0	Y	WCI
ot 7 Crystal Avenue	38	291	7	State of CT	N	Parking Lot	0	0	0	1	Outbuildings/Paving		0	0	22500			0	N	R4
55 Eastern Avenue	47	244	1	Kollman, William C.	N	Three Family	2		0	1	Family Conversion	Gable	2	1890	4533	4453		1249	N	R2
ot 10 Eastern Avenue	47	244	10	Filardi, Peter A.	N	Warehousing	0	0	1	1	Industrial/Warehouse	Irregular	2	1976	48787	36200		29700	Y	WCI
Lot 10.A Eastern Avenue	47	244	10A	Carr, John F.	N	Vacant Land	0	0	0	0			0	0	99752			0	N	WCI
63 Lewis Street	47	244	12.2	City of New London	N	Municipal Plant	0	0	1	1	Industrial/Warehouse	Flat	1	1978	16806	6160		3080	Y	WCI
5 Lewis Street	47	244	12.1	Carr, John	N	Office Building	0	0	1	1	Industrial/Warehouse	Flat	2	1925	13250	15492		5324	Y	WCI
1 Eastern Avenue	47	244	13	Carr, John F.	N	Comm/Warehouse	0	0	1	1	Industrial/Warehouse	Flat	1	1955	43560	13832		10840	Y	WCI
51 Eastern Avenue	47	244	2	Laplace, Louis A. & Sally	Y	Two Family	2			1	Family Conversion	Gable	2	1895	4830	3456		1008	N	R2
7 Eastern Avenue	47	244	3	Bernier, Lynn-Ann	Y	Three Family	3		0	1	Family Conversion	Gable	2	1890	4795	3918		1218	N	R2
43 Eastern Avenue	47	244	4	Christian, Clarence E.	Y	Single Family	1		0	1	Residential	Gable	2	1890	4715	1959		783	N	R2
1 Eastern Avenue	47	244	5	Pabon, Norma	Y	Single Family	1		0	1	Residential Ranch	Gable	1	1954	4658	523	400	523	N	R2
7 Eastern Avenue	47	244	6	Filardi, Peter & Ann	N	Vacant Land	0	0	0	0			0	0	4600			0	Y	WI
21 Eastern Avenue	47	244	7	Filardi, Peter A.	N	Vacant Land	0	0	0	0	Accessory Buildings		0	0	13300			0	Y	WCI
3 Eastern Avenue	47	244	9	Thames Valley Steel Corp	N	Vacant Land	0	0	0	0	Accessory Buildings		0	0	4200			0	Y	WCI
delaide Street	47	292	1	City of New London-ADE	N	Vacant Land	0	0	0	0			0	0	18300			0	Y	R2
Lot 12.03 Crystal Avenue	47	292	12.03	State of CT	N	Parking Lot	0	0	0	0	Outbuildings		0	0	11615			0	Y	WCI
ot 12.02 Crystal Avenue	47	292	12.02	City of New London	N	Municipal	0	0	0	0	Outbuildings		0	0	25650			0	Y	WCI
6 Lewis Street	47	292	21	Carr, John F.	N	Comm/Warehouse	0	0	1	1	Warehouse	Shed	2	1980	57934	64800		32400	Y	WCI
72 Central Avenue	47	292	4	Loyal Order of Moose	N	Club/Lodge	0	0	1	1	Clubs/Lodges	Flat	2	1960	26400	7168		3668	Y	R2
7 Adelaide Street	47	293	1	Stevens, Richard C. Jr &	Y	Three Family	3		0	1	Family Conversion	Gable	2	1921	10000	4940	3600	1200	N	R2
1 Adelaide Street	47	293	2	Provost, Jon L. & Mary	N	Two Family	2		0	1	Family Flat	Gable	2	1921	5000	4936	2314	1162	N	R2
Central Avenue	47	293	24	Polish American Veterans Auxiliary Club	N	Club/Lodge	0	0	1	1	Clubs/Lodges	Flat	1	1960	21500	3840		3840	Y	R2
9 Adelaide Street	47	293	3	Gerrish, Lawrence, etal	N	Two Family	2		0	1	Family Flat	Gable	2	1929	5000	4924	2300	1150	N	R2
97 Adelaide Street	47	293	4	Sullivan, Mary V.	Y	Single Family	1		0	1	Ranch	Gable	1	1958	15000	1672	1432	1672	N	R2
42 Eastern Avenue	47	293	5	Gaska, Victor Sr.	Y	Single Family	1		0	1	Ranch	Gable	1	1933	7000	1654	885	1150	N	R2
0 Eastern Avenue	47	293	6	Gaska, Victor Sr.	N	Two Family	2		0	1	Family Conversion	Gable	2	1890	9525	1868	1152	576	N	R2
18 Eastern Avenue	47	293	8.01	Carr, John F.	N	Warehousing	0	0	1	2	Warehouse	Flat	2	1952	129809	99028		91566	Y	WCI

APPENDIX B

TRAFFIC

A study of the traffic and parking impacts associated with the proposed State Pier redevelopment has been prepared for the MDP application. For purposes of this study, existing traffic volumes along State Pier Road, Crystal Avenue, Williams Street, and CT Route 32 were obtained and projected to the year 2001, the anticipated year redevelopment would be completed. These volumes were analyzed under two scenarios, minimal developmental growth and total redevelopment.

- *Traffic Volumes*

To determine the traffic impact of future development in the MDP area, existing traffic volumes were developed. These traffic volumes are a combination of hourly counts conducted by Milone & MacBroom, Inc. in the month of November 1998 and information received from the State of Connecticut Department of Transportation.

Figures B-1 and B-2 represent existing 1998 A.M. and P.M. peak hour traffic volumes, respectively. Table B1 summarizes this information relative to estimated Average Daily Traffic (ADT).

TABLE B1
Average Daily Traffic

LOCATION	*Vehicles Per Day*		
	NB/EB	*SB/WB*	*Both Directions*
Williams Street (SR 635)			
• North of SR 641 (Huntington St)	---	---	11,800
SR 437 (Crystal Avenue)			
• North of Route 32	1,200	1,700	2,900
SR 437 (State Pier Road)			
• East of Crystal Avenue	---	---	900
SR 641 (Huntington Street)			
• East of SR 635	---	---	7,500

Source: State of CT DOT, Bureau of Policy & Planning, 1996.

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	NB/EB	SB/WB	Both Directions
Williams Street (SR 635)			
• North of SR 641 (Huntington St)	---	---	11,300
SR 427 (Crystal Avenue)			
• North of Route 32	1,200	1,700	2,900
SR 427 (State Pier Road)			
• East of Crystal Avenue	---	---	500
SR 641 (Huntington Street)			
• East of SR 635	---	---	7,500

Source: State of CT DOT, Bureau of Policy & Planning, 1996.

Existing 1998 traffic volumes were projected to 2001, the year development is expected to be completed, using a 2% per year peak hour growth factor to account for normal traffic growth in the area. Inquiries to the City of New London and the State Traffic Commission (STC) were made regarding other development in the area. As a result, anticipated traffic associated with the Pfizer Global Development Facility was included to develop 2001 background traffic volumes.

Figures B-3 and B-4 illustrate background traffic, defined as design year traffic, and does not have the redevelopment activities included in the traffic volumes.

- *Evaluation Methodology/Analyses*

The following provides discussion with respect to intersection capacity analyses. In discussing intersection capacity, two terms are used to describe the operating condition of the road or intersection. These two terms are volume to capacity ratio (v/c) and Level of Service (LOS).

The v/c ratio is a ratio of the volume of traffic using an intersection to the total capacity of the intersection. This accounts for the maximum number of vehicles that can utilize the intersection during an hour. The v/c ratio can be used to describe the percentage of capacity utilized by a single intersection movement, a combination of movements, an entire intersection approach, or the intersection as a whole. As the v/c ratio approaches one (1), the intersection nears capacity and it may become impossible to accommodate all the vehicles attempting to travel through the intersection.

LOS for signalized intersections is a measure of the delay experienced by "stopped" vehicles at an intersection. Delay is described as a measure of driver discomfort, frustration, fuel consumption, and lost travel time. Therefore, intersections with longer delay times are less acceptable to most drivers. Level of Service for signalized intersections is rated on a scale from A to F and is summarized in Table B2.

Existing 1998 traffic volumes were projected to 2001, the year development is expected to be completed, using a 2% per year peak hour growth factor to account for normal traffic growth in the area. Inquiries to the City of New London and the State Traffic Commission (STC) were made regarding other development in the area. As a result, anticipated traffic associated with the Pfizer Global Development Facility was included to develop 2001 background traffic volumes.

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TABLE B2
Level of Service Criteria
Signalized Intersections

Level of Service	*Stopped Delay Per Vehicle (seconds)*
A	≤5.0
B	>5.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤40.0
E	>40.0 and ≤60.0
F	>60.0

Similar to signalized intersections, level of service for unsignalized intersections is also measured in terms of delay. Unsignalized intersections, however, are measured in terms of the "average" total delay per vehicle. Total delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line. Table B3 represents Level of Service criteria for unsignalized intersections.

TABLE B3
Level of Service Criteria
Unsignalized Intersections

Level of Service	*Average Total Delay (seconds/vehicle)*
A	≤5
B	>5 and ≤10
C	>10 and ≤20
D	>20 and ≤30
E	>30 and ≤45
F	>45

Level of Service is generally used to describe the operation, based on delay time, of both signalized and unsignalized intersections, whereas the v/c ratio is applied to signalized capacity analyses only.

The methodology for conducting signalized and unsignalized intersection capacity analyses are taken from the "1994 Highway Capacity Manual" (Special Report No. 209), published by the Transportation Research Board.

TABLE B2
Level of Service Criteria
Signalized Intersections

Level of Service	Stopped Delay Per Vehicle (seconds)
A	≤5.0
B	>5.0 and ≤15.0
C	>15.0 and ≤25.0
D	>25.0 and ≤40.0
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A	≤5
B	>5 and ≤10
C	>10 and ≤20
D	>20 and ≤30
E	>30 and ≤45
F	>45

Level of Service is generally used to describe the operation, based on delay time, of both signalized and unsignalized intersections, whereas the v/c ratio is applied to signalized capacity analyses only.

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Using the previously referenced methodologies, A.M. and P.M. peak hour capacity analyses were conducted at the following intersections:

- Williams Street at Huntington Street and Williams Street #1
- Williams Street at State Pier Road
- State Pier Road at Crystal Avenue
- Crystal Avenue at CT Route 32 and Water Street
- Crystal Avenue at Lewis Street
- Crystal Avenue at Adelaide Street

Table B4 is a summary of the Level Of Service and intersection delays calculated for the intersections analyzed in this study. Copies of the background analysis worksheets are attached.

TABLE B4
Level of Service Summary
Background Conditions

Location	*A.M. Peak Hour Background*	*P.M. Peak Hour Background*
Signalized Intersections[1]		
• Williams St at Huntington St and Williams Street #1	C/0.65	B/0.51
• State Pier Road at Crystal Avenue	B/0.11	B/0.11
• Crystal Avenue at Route 32 and Water Street	A/0.47	B/0.59
Unsignalized Intersections		
• Williams Street at State Pier Road		
WB Left	E	F
WB Right	B	B
SB Left	A	B
Overall [2]	A/2.5	B/6.3
• Crystal Avenue at Lewis Street		
EB	A	A
WB	A	A
NB Left	A	A
SB Left	A	A
Overall [2]	A/2.0	A/1.9
• Crystal Avenue at Adelaide Street		
EB	A	A
WB	A	A
NB Left	A	A
SB Left	A	A
Overall [2]	A/0.80	A/1.1

(1) Level of Service / Volume to Capacity Ratio
(2) Level of Service / Intersection Delay (seconds/vehicle)

Using the previously referenced methodologies, A.M. and P.M. peak hour capacity analyses were conducted at the following intersections:

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• Crystal Avenue at Route 32 and Water Street	B/0.11	B/0.11
Unsignalized Intersections	A/0.47	B/0.59
• Williams Street at State Pier Road		
WB Left		
WB Right	B	F
SB Left	B	B
Overall[2]	A	B
• Crystal Avenue at Lewis Street	A/2.5	B/6.3
EB		
WB	A	A
NB Left	A	A
SB Left	A	A
Overall[2]	A	A
• Crystal Avenue at Adelaide Street	A/2.0	A/1.9
EB		
WB	A	A
NB Left	A	A
SB Left	A	A
Overall[2]	A	A
	A/0.80	A/1.1

(1) Level of Service / Volume to Capacity Ratio
(2) Level of Service / Intersection Delay (seconds/vehicle)

A review of Table B4 indicates that, under background conditions, the intersection of Williams Street and State Pier Road will operate poorly for motorists making a left turn from State Pier Road onto Williams Street. Although the volume of traffic making a left turn is more or less proportional to right turning traffic from State Pier Road, through volumes on Williams Street result in long delays for left turning traffic from State Pier Road. Overall operations at the remaining intersections are considered "good," experiencing LOS C or better.

- *Anticipated Traffic*

For purposes of analysis and comparison, two scenarios were analyzed: Minimal Developmental Growth and Total Redevelopment. Minimal developmental growth assumes no major development will occur. This scenario, earlier referenced as "background traffic," accounts for normal traffic growth in the area. Total redevelopment assumes parcel consolidation, possible roadway closure or restructuring and build-out of selected parcels. It should be stressed that the information developed within this study is meant for analysis only.

Based on preliminary estimates, the MDP area is anticipated to support a ±100,000 square foot warehouse development.

Estimates of the amount of traffic expected to be generated by the anticipated warehouse development were made using the 1997 Institute of Transportation Engineers (ITE) publication "Trip Generation." This publication is a compilation of trip generation data for various facilities that provides data for anticipated traffic, relative to the type and size of the development, the number of employees and/or other quantitative measures. For purposes of analysis, Land Use Code 150 (Warehousing) was used. Table B5 illustrates the anticipated number of new site trips associated with this development.

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TABLE B5
Anticipated Site-Generated Traffic*
Full Redevelopment

Vehicle Trips	*AM Peak Hour*			*PM Peak Hour*		
	Entering	*Exiting*	*Total*	*Entering*	*Exiting*	*Total*
New Trips	67	15	82	18	57	75

*Calculated using ITE "Trip Generation" methodology for Land Use Code 150.

An arrival/departure distribution for site-generated traffic traveling to and from the proposed development was developed by reviewing the existing traffic patterns and the geographical location of the site in relation to area roads. Figure B-5 represents the site traffic distributions for the area.

Using the arrival/departure distribution, the site-generated traffic was added to the roadway system with the results shown on Figures B-6 and B-7 for the A.M. and P.M. peak hours, respectively. These volumes were then added to the background volumes to yield the 2001 combined peak hour traffic volumes. Figures B-8 and B-9 illustrate the 2001 A.M. and P.M. combined peak hour traffic volumes, respectively.

- *Traffic Analysis Comparison and Conclusion*

Similar to background conditions, intersection capacity analyses were performed to determine the impact of the site-generated traffic. Table B6 summarizes the results of the analyses.

TABLE B5
Anticipated Site-Generated Traffic*
Full Redevelopment

Vehicle Trips	AM Peak Hour			PM Peak Hour		
	Entering	Exiting	Total	Entering	Exiting	Total
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- Traffic Analysis Comparison and Conclusion

Similar to background conditions, intersection capacity analyses were performed to determine the impact of the site-generated traffic. Table B6 summarizes the results of the analyses.

TABLE B6
Level of Service Summary
Combined Conditions

Location	*A.M. Peak Hour Combined*	*P.M. Peak Hour Combined*
Signalized Intersections[1]		
• Williams St at Huntington St and Williams St #1	C/0.67	C/0.51
• State Pier Road at Crystal Avenue	B/0.15	B/0.15
• Crystal Avenue at Route 32 and Water St	A/0.47	B/0.59
Unsignalized Intersections		
• Williams Street at State Pier Road		
WB Left	F	F
WB Right	B	B
SB Left	A	B
Overall [2]	A/3.4	C/19.2
• Crystal Avenue at Lewis St		
EB	A	A
WB	A	A
NB Left	A	A
SB Left	A	A
Overall [2]	A/2.0	A/1.8
• Crystal Avenue at Adelaide St		
EB	A	A
WB	A	A
NB Left	A	A
SB Left	A	A
Overall [2]	A/0.80	A/1.1

(1) Level of Service / Volume to Capacity Ratio
(2) Level of Service / Intersection Delay (seconds/vehicle)

A review of Table B6 indicates that the intersection of Williams Street and State Pier Road continues to operate poorly for motorists making a left turn from State Pier Road onto Williams Street. Although the volume of traffic making a left turn is more or less proportional to right turning traffic from State Pier Road, through volumes on Williams Street result in long delays for left turning traffic from State Pier Road. Overall operations at the intersections are considered "good," experiencing LOS C or better.

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Combined Conditions

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Signalized Intersections[1]		
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• Crystal Avenue at Route 32 and Water St	A/0.47	B/0.59
Unsignalized Intersections		
• Williams Street at State Pier Road		
WB Left	F	F
WB Right	B	B
SB Left	A	B
Overall [2]	A/3.4	C/19.2
• Crystal Avenue at Lewis St		
EB	A	A
WB	A	A
NB Left	A	A
SB Left	A	A
Overall [2]	A/2.0	A/1.8
• Crystal Avenue at Adelaide St		
EB	A	A
WB	A	A
NB Left	A	A
SB Left	A	A
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The intersection of State Pier Road at Williams Street has been evaluated to determine the need for a traffic signal. The criteria for the installation of a traffic signal as outlined in the Manual on Uniform Traffic Control Devices has been reviewed. The results of our investigation indicates that a traffic signal may be warranted in the future. In conjunction with the State Traffic Commission (STC) certificate application, the warrants for the installation of a traffic signal at this location will need to be further explored.

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REAL ESTATE MARKET ANALYSIS
STATE PIER PROPERTY
NEW LONDON, CT

January, 1999

Prepared for

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RKG

RKG Associates, Inc.

REAL ESTATE MARKET ANALYSIS FOR THE NEW LONDON STATE PIER

A. Executive Summary

The purpose of this report is to present the results of a real estate market analysis conducted to evaluate real estate market demand for the State Pier property in New London, Connecticut. The construction of a 150,000 square foot warehouse facility, with ancillary exterior storage for break-bulk cargo operations, has been proposed at the State Pier. At the request of the New London Development Corporation (NLDC), RKG Associates initiated a market study to update the real estate analysis contained in *the Transportation and Land Use Compatibility Study for the New London State Pier*, prepared in 1997 by the Maquire Group. This report represents an update of the previous study. Current market conditions were evaluated for office and industrial uses. Also, the locational attributes of the site were evaluated as they relate to marketability of the site.

In New London County, the expansion of the gaming and tourism industries has had the most noticeable impact on the commercial and residential real estate market over the past few years. In addition, the downsizing of defense-related industries has created increased vacancies in office, industrial and commercial properties.

RKG Associates, Inc. analyzed both the New London County and the City real estate market in order to evaluate alternative real estate market options for the State Pier site. The major findings and conclusions of this analysis are summarized below.

Site Specific Findings

- The State Pier would benefit from the removal of the enclave of residential houses, not only in terms of making the site more developable but also removing a blight problem.

- In addition, the proposed traffic improvements for the area should serve to reduce traffic confusion, and improve circulation.

- The creation of a large warehouse/distribution operation would provide a complimentary use to the existing industrial activities in the neighborhood. In addition, the availability of multi-modal transportation alternatives could help regional businesses compete more effectively.

- According to regional real estate brokers, the strongest demand for industrial properties is for modern, high bay warehouse facilities, similar to the facility proposed for the State Pier. Given the proximity of the property to Interstate 95, this use would seem to be a good fit for the State Pier site. Although manufacturing use would provide greater benefits in terms of employment opportunities, the manufacturing segment of the regional economy has been hard hit. Manufacturing in New London as well as Connecticut has been on the decline for the last fifty years, and the State Pier property is not likely to reverse this trend. Water-related manufacturers would be good alternatives and the Free Trade Zone designation may encourage a company

REAL ESTATE MARKET ANALYSIS FOR THE NEW LONDON STATE PIER

A. Executive Summary

The purpose of this report is to present the results of a real estate market analysis conducted to evaluate real estate market demand for the State Pier property in New London, Connecticut. The construction of a 150,000 square foot warehouse facility, with ancillary exterior storage for break-bulk cargo operations, has been proposed at the State Pier. At the request of the New London Development Corporation (NLDC), RKG Associates initiated a market study to update the real estate analysis contained in the Transportation and Land Use Compatibility Study for the New London State Pier, prepared in 1997 by the Maguire Group. This report represents an update of the previous study. Current market conditions were evaluated for office and industrial uses. Also, the locational attributes of the site were evaluated as they relate to marketability of the site.

In New London County, the expansion of the gaming and tourism industries has had the most noticeable impact on the commercial and residential real estate market over the past few years. In addition, the downsizing of defense-related industries has created increased vacancies in office, industrial and commercial properties.

RKG Associates, Inc. analyzed both the New London County and the City real estate market in order to evaluate alternative real estate market options for the State Pier site. The major findings and conclusions of this analysis are summarized below.

Site Specific Findings

- The State Pier would benefit from the removal of the enclave of residential houses, not only in terms of making the site more developable but also removing a blight problem.

- In addition, the proposed traffic improvements for the area should serve to reduce traffic confusion, and improve circulation.

- The creation of a large warehouse/distribution operation would provide a complimentary use to the existing industrial activities in the neighborhood. In addition, the availability of multi-modal transportation alternatives could help regional businesses compete more effectively.

- According to regional real estate brokers, the strongest demand for industrial properties is for modern, high bay warehouse facilities, similar to the facility proposed for the State Pier. Given the proximity of the property to Interstate 95, this use would seem to be a good fit for the State Pier site. Although manufacturing use would provide greater benefits in terms of employment opportunities, the manufacturing segment of the regional economy has been hard hit. Manufacturing in New London as well as Connecticut has been on the decline for the last fifty years, and the State Pier property is not likely to reverse this trend. Water-related manufacturers would be good alternatives and the Free Trade Zone designation may encourage a company

looking to expand. However, the site does not provide enough land area for a large scale plant like Electric Boat or Dow Chemical.

Findings Related to the City and Region

- Since 1980, New London County's employment base has been transformed from a defense-related manufacturing base to more of a service and tourism oriented economy.
- The New London County real estate market, similar to its economic base, has been in transition and is beginning to show signs of recovery. Real estate values, in general, have been steadily increasing over the past several years. However, values remain below levels experienced in the mid to late 1980s in many markets. In addition, the recession of the early 1990s has left a number of buildings trading well below their replacement costs.
- The real estate market in New London County is primarily dominated by end-users. This is evidenced by the large and diverse facilities owned by the major employers located throughout the region.
- The larger region has an adequate supply of commercial and industrial land for long term expansion. However, the supply of commercial and industrial land in the City of New London is limited. Development of the State Pier property for warehouse operations will help to meet the needs of this segment of the market, which has performed well over the past two years, and capitalize on the proximity of the site to Interstate 95.
- A supply of 2.5 million SF of non-residential buildings is available in the New London County market. Approximately 31 percent of non-residential buildings are located within the City of New London, with the remaining 69 percent scattered primarily between Norwich, Jewett City, Groton, and Waterford. Although a majority of this supply (65%) is industrial, only a small percentage (7%) is in the City of New London.
- A large percentage of the regional supply of industrial buildings (40%) is older mill-type complexes. In contrast, only 20% of the region's available industrial properties is considered to be "modern" (post-1980 construction). At this time there is only one available post-1980 industrial building (15,000 SF) in the City of New London. This suggests that there is a limited supply of quality industrial space for potential users, and that development of a modern warehouse industrial facility at the State Pier site could be supported.
- Twenty-four percent (598,200 SF) of the total regional supply of non-residential buildings are office properties of which 62 percent (371,400 SF) are within the City of New London. This includes approximately 190,000 SF at the former Naval Undersea Warfare Center (NUWC) site, which is expected to be demolished, according to the Municipal Development Plan for Fort Trumbull. At the present time, there is a limited supply of available Class A office space (46,000

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- A supply of 2.5 million SF of non-residential buildings is available in the New London County market. Approximately 31 percent of non-residential buildings are located within the City of New London, with the remaining 69 percent scattered primarily between Norwich, Jewett City, Groton, and Waterford. Although a majority of this supply (65%) is industrial, only a small percentage (7%) is in the City of New London.

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SF) in the City of New London. Most of the other available office properties (97,100 SF) are Class B and C buildings in the downtown area.

- Retail/commercial service buildings constitute the remaining 11% (265,615 SF) of the available regional building supply. Nearly 54 percent (143,000 SF) of this space is located in the City of New London, and a majority of this supply is ground floor space in the downtown area, suggesting a sizable inventory. Recently, the New London Development Corporation initiated a Downtown Master Plan that will develop a long term strategy and implementation plan for revitalizing this section of the City.

- Real estate conditions in the City of New London have shown signs of recovery as evidenced by 90% occupancy level at selected Class A office buildings. However, occupancy at the older Class B and C buildings is lagging behind. Although rents at Class A properties have stabilized, they remain below the level needed to support new speculative construction. In addition, the historic sales values of Class A office space, created by past imbalances in the market, have not recovered sufficiently to justify new construction except for an end-user.

B. Purpose and Sources of Data

The purpose of this technical memorandum is to present a market analysis relating to the planned redevelopment of the State Pier Area. The methodology used includes an analysis of key socioeconomic conditions in the City of New London and the region, as well as any forecasted changes over the next ten to fifteen years. These modified economic and population projections are then used to estimate future development demands within the City of New London. The existing regional and local real estate markets are also analyzed in order to identify the available supply of land and buildings, as well as other market characteristics. The markets examined for this analysis include industrial, office, retail/commercial services and hospitality.

This report is presented in three major sections: 1) an analysis of existing socioeconomic conditions and future projections; 2) an analysis of real estate market conditions and characteristics; and 3) extrapolation of demand indicators in order to estimate possible development implications for the City of New London.

C. Sources Utilized and Assumptions

A variety of statistical and anecdotal information was used in this report. This information included previous studies prepared specifically for the State Pier, as well as the City of New London and New London County. Data sources are listed below:

- $ *Strategic Plan for Economic Development* prepared by Arthur D. Little, Inc. for the Southeastern Connecticut Economic Development Coalition, March, 1992
- $ *Southeastern Connecticut Almanac* prepared as a fact book of business resources for the Corporation for Regional Economic Development (CRED), in early 1996.

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- Draft *Plan of Development, City of New London, Connecticut* prepared by the Office of Development and Planning and the New London Plan of Development Steering Committee, August, 1996.
- *Physical, Real Estate and Market Assessment for a Transportation and Land Use Compatibility Study, New London State Pier*, prepared by the Maguire Group, April, 1997.
- *Pfizer New London Mills Project: An Economic Impact Study* , prepared by the Connecticut Center for Economic Analysis, University of Connecticut, date unknown, but assumed to have been prepared in early 1998
- Preliminary Draft of *Existing Socioeconomic Conditions: Technical Report*, dated July 14, 1998, prepared by RKG Associates, as part of the Connecticut Route 2/2A/32 Environmental Impact Statement.
- Draft *Redevelopment Plan for Ocean Beach Park, New London*, prepared by Economic Research Associates, July 2, 1998.
- *Highest and Best Use Analysis for the Norwich State Hospital*, prepared by CB Richard Ellis and released in September, 1998.

In addition, other data was compiled and reviewed from various published and unpublished sources including, but not limited, to the following:

- Historic and current employment data for the New London Labor Market Area and the City of New London, and ten-year employment projections for the Eastern Connecticut region (1996-2006), provided by the Connecticut Department of Labor, Office of Research.
- 1990 U.S. Census Data for New London City and County, as well as 1996 U.S. Census population estimates.
- Population estimates and projections for New London City and County (1995 - 2010), prepared by the Connecticut Office of Policy and Management
- 1998 household estimates from Claritas, Inc.
- Recent listings of commercial and industrial properties in New London County obtained from the Connecticut Economic Resource Center (CERC).
- Recent listings from various commercial and industrial brokers in New London City and County.
- Newspaper articles in the *Norwich Bulletin*, *The Day* and the *Boston Globe*.

In addition to reviewing the above referenced material, various individuals were interviewed, including officials with the City of New London, Office of Planning and Community Development, Connecticut Mystic and More (the regional tourism bureau), real estate brokers, as well as various business and property owners/managers.

D. Municipal Description

Traditionally, the City of New London, located along the coast of southeastern Connecticut, is regarded as a major urban center for New London County[1]. The City enjoys deep water access as well as a shoreline setting at the confluence of the Thames River and Long Island Sound. However, the physical size of the city, containing only 5.67 square miles, is considered very small in comparison to the adjacent towns of Waterford (32.8 square miles) and Groton (31.3 square miles).

1. Transportation

Highway: Highway access to the City as well as the region is regarded as excellent. There are two exits from Interstate 95 within the town boundaries, which lead drivers to Providence, RI and Boston, MA to the north (east) , and to New Haven, Bridgeport and Stamford, CT to the south (west). Interstate 395 which intersects with I-95 in East Lyme/Waterford, about 4 miles west of New London, leads through the eastern Connecticut communities of Norwich, Plainfield and Putnam as it heads north to Massachusetts and connects with Interstates 90 and 290, just south of Worcester, MA. Worcester, New Haven and Providence are approximately within an hours drive from New London. The major metropolitan centers of New York City and Boston can generally be reached within three hours, barring traffic.

Local access to New London is provided by State Highway 32 which runs north/south (parallel to the Thames River) connecting New London with I-395 in Montville as well as Norwich. State Pier Road intersects with this route, which is presently under construction. The new Mohegan Sun Casino located approximately 10 miles to the north in Uncasville can be access by this highway. State Route 85, New London-Hartford Turnpikes heads to the northwest through Waterford and connects with the central region of the state. US Route 1 also bisects New London and provides local access to neighboring Waterford.

While local access to the north and west is regarded as good, access to the east is limited to the Interstate 95 bridge over the Thames River. This elevated bridge provides the only east-west highway link between the Towns of Groton and New London. The State Pier property is located just south of the Interstate 95 bridge, however the site is barely visible from I-95 due to its elevation and screening.

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[1] For the purpose of this analysis, the region encompasses the twenty-one municipalities of New London County according to the US Census. They include Bozrah, Colchester, East Lyme, Franklin, Griswold, Groton (including West Mystic), Lebanon, Ledyard, Lisbon, Lyme, Montville, New London, North Stonington, Norwich, Old Lyme, Preston, Salem, Sprague, Stonington (including Mystic), Voluntown and Waterford.

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Rail Service: Amtrak provides passenger service on its Boston to New York run from the restored Union Station in downtown New London provides. Presently, Amtrak is in the process of electrifying the rail lines in the New Haven to Boston corridor in order to accommodate high-speed rail service. This upgrade is projected to increase ridership as well as making remote destinations, such as New London, more accessible to train service.

Freight rail service is also available in New London. Central Vermont Railway, which was recently purchased by Railtex, terminates at the pier adjacent to the State Pier property. This rail line is reported to be a direct link between eastern Canada and an eastern United States' seaport. Railtex has also entered partnership agreements with Conrail to manage train service in other portions of Connecticut. Railtex is believed, according to contacted sources, to have a more aggressive management philosophy in operating the former Central Vermont Railway, than its previous owner (Canadian government), that increased freight service from New London is anticipated.

Deep Water Access: The Cross Sound Ferry Company provides year round service for both passenger and vehicles from New London to Orient Point, Long Island, New York. Fisher Island Ferry Service also maintains operation in New London, adjacent to the City Pier, near the downtown. The Mashantucket Pequots are also proposing high speed ferry service to New York City. The State Pier was renovated in 1997, and has seen operations expand since re-opening. The adjacent Central Vermont pier and a portion of the property has been utilized (and leased) by Continental Salt for importing road salt for the region.

Conclusion: New London has a diverse transportation network which provides excellent access to the region as well as to the Northeast Corridor as a whole. The City is centrally located within three hours of the major population centers of Hartford, CT; New York City, NY; and Boston, MA, and within a days drive of Washington DC and Montreal. This unique transportation link should provide the community and the region with opportunities for growth in the future. However, access to the State Pier property, as discussed in the Neighborhood Section, is more difficult.

2. Demographic Information

This section examines change in population for the City of New London as well as the region and the State, between 1980 and 1996. Population estimates and projections developed by the Connecticut Office of Policy and Management (OPM) for the years 1995, 2000, 2005, and 2010 are also examined. A review of historical population trends is useful as a general indicator of overall economic conditions and development trends. Conversely, population projections provide a sense of where future growth is likely to occur.

a. Population

Table 1 illustrates population growth trends for the City of New London, in comparison to New London County and the State as a whole. The most recent available population projections, at five year intervals, are also included in the Table.

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Actual, Estimated and Projected Population 1980 – 2010
City of New London, New London County and State of Connecticut

	Actual & Estimated Population [1]			Projected Population [2]			
	1980	1990	1996 (est)	1995	2000	2005	2010
City of New London	28,843	28,540	26,893	26,920	26,050	26,160	27,900
New London County	238,409	254,957	250,735	255,275	255,630	261,050	271,090
State of Connecticut	3,107,576	3,287,116	3,274,238	3,289,090	3,316,120	3,364,080	3,435,400
	Total Numeric Change						
	1980-90	1990-96	1980-96	1996-2000	2000-05	2005-10	Ann. Chg. 2000-2010
City of New London	(303)	(1,647)	(1,950)	(843)	110	1,740	185
New London County	16,548	(4,222)	12,326	4,895	5,420	10,040	1,546
State of Connecticut	179,540	(12,878)	166,662	41,882	47,960	71,320	11,928
	Total Percent Change						
	1980-90	1990-96	1980-96	1996-2000	2000-05	2005-10	Ann. Chg. 2000-2010
City of New London	-1.1%	-5.8%	-6.8%	-3.1%	0.4%	6.7%	0.7%
New London County	6.9%	-1.7%	5.2%	2.0%	2.1%	3.8%	0.6%
State of Connecticut	5.8%	-0.4%	5.4%	1.3%	1.4%	2.1%	0.4%

[1] U.S Census Bureau
[2] Population projections prepared by the Connecticut Office of Policy and Management (OPM) in 1995
Source: U.S. Census Bureau, Connecticut OPM and RKG Associates, Inc.

In 1990, the City of New London had a population of more than 28,500 persons, which indicated a marginal decline from 1980, when the population was reported at more than 28,800. In comparison, population for New London County in 1990 was nearly 255,000 person, representing an increase of 6.9% from 1980. This growth at the County level during the 1980's is slightly higher than the rate experience at the State level (5.8%). However in 1996, according to U.S. Census estimates, the population in the City of New London declined to nearly 26,900 persons, indicating a 5.8% loss. By 1996, the population in the County declined to 250,700 persons, equating to a loss of 1.7% from 1990. The out migration of population between 1990 and 1996 experienced in the City of New London was more severe, on a percentage basis, than at the County or State (-0.4%) level, suggesting intra-county or intra-state migration.

Table 1 also presents population projections, in 5-year intervals, over the 15-year period of 1995 to 2010. It should be noted that these projections, prepared by the State of Connecticut, were completed prior to the 1996 estimates developed by the U.S. Census Bureau. In each case, the 1995 projections prepared by the State were slightly higher than the 1996 Census estimates. These discrepancies, even though they are minimal, can be attributed to differing methodologies utilized to prepare estimates versus projections, as well as the base numbers and assumptions used for each methodology.

Even with these limitations, population growth rates for the City of New London are projected to decline until the year 2000, and stabilize during the following five years. During the ten year period from 2000 and 2010, population for New London is projected to increase at an annual rate of nearly 0.7%. However, most of this increase is forecasted to occurred after the year 2005.

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Population at the County and State level is forecasted to increase at a more stable pace than the erratic cycle projected for the City of New London. Population increases at the County level are slightly higher on a percentage basis than forecasted rates at the State level.

It is not surprising that minimal population growth was projected for the City over the short term given the economic transition occurring in the region. As the economic base of the community becomes more diversified and stable in the early portion of the 21st century, it is projected that the City=s population will experience increased growth.

b. Households

Current statistics on household formations were obtained from Claritas, Inc, and are presented in Table 2. As shown, the rate of new household formations in New London County outpaced the overall rate of population increase between 1980 and 1990. Table 2 shows that approximately 11,400 new households were created in New London County during this ten year period, an increase of 14%. Population growth, as previously shown on Table 1, was only 6.9% during this time period. This finding suggests that much of the household growth was due to the changing age distribution of the region's existing residential population, rather than in-migration. Another contributing factor to this trend was the change in household size, which declined by 6.8%, from 2.78 persons per household in 1980 to 2.59 persons in 1990.

To a lesser extent, this change in household formation and size between 1980 and 1990 was also experienced in the City of New London. During the 1980's approximately 250 new households were formed in the City, despite a decline in population of 300 persons during this time. In addition, the average household size of 2.38 in 1980, declined to 2.29 in 1990, reflecting to a 3.8% decrease.

Household changes between 1990 and 1998, based on estimates prepared by Claritas, Inc., indicate that the number of households in the City of New London declined by more than 1,400. However, the number of household formations at the County level was positive, although sharply lower in comparison to the prior decade. This finding suggests that other communities in the County experienced some growth or transfer of households, offsetting the losses that occurred in the City of New London. The lack of new household formations tends to support the estimated decline in population between 1990 and 1996, exhibited by the U.S. Census Bureau data discussed in the previous section.

Table 2
Total Households and Household Sizes:
1980, 1990, and 1998

	Actual and Estimated Count		
	1980	1990	1998 (est)
City of New London	10,461	10,712	9,271
New London County	81,814	93,245	93,856
State of Connecticut	1,093,675	1,230,479	1,229,087
	Total Number Change		
	1980-90	1990-98	1980-1998
City of New London	251	(1,441)	(1,190)
New London County	11,431	611	12,042
State of Connecticut	136,804	(1,392)	135,412
	Total Percent Change		
	1980-90	1990-98	1980-1998
City of New London	2.4%	-13.5%	-11.4%
New London County	14.0%	0.7%	14.7%
State of Connecticut	12.5%	-0.1%	12.4%
	Actual and Estimated Household Size		
	1980	1990	1998 (est)
City of New London	2.38	2.29	2.26
New London County	2.78	2.59	2.57
State of Connecticut	2.76	2.59	2.59

Source: U.S. Census and Claritas, Inc.

E. Regional Economic Conditions

The New London-Norwich Labor Market Area (LMA) has a diversified base of employers. A few of the larger employers include Pfizer Incorporated, Electric Boat (General Dynamics), Foxwoods Resort and Casino, Mohegan Sun Casino, Dow Chemicals, U.S. Naval Submarine Base, U.S. Coast Guard Academy, Connecticut College, and Lawrence and Memorial Hospital.

The New London-Norwich Labor Market Area (LMA) has made the transition from a defense-oriented manufacturing base to a service oriented economy. The gaming and tourism industries have primarily replaced all job losses experienced during the early 1990s. In fact, employment levels in the New London LMA for June, 1998 (141,300 jobs) were at their highest level since 1988 (132,000 jobs), the peak of the previous economic cycle. Employment data by major industry sector for the LMA, provided by the Connecticut Department of Labor, for the years 1988, 1993, 1997 and 1998 are summarized in Table 3. The data represents employment as of June of each year for comparison purposes. It should be noted that the Connecticut Department of Labor categorizes employment at the Foxwoods and Mohegan Sun casinos as government sector employment in the statistics, since the employers are tribal nations. Typically, these facilities, if operated by a non-government entity, would be classified as a Service industry (Amusement and Recreation Services).

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Between 1988 and 1998 total employment in the New London LMA increased by nearly 9,300 jobs. This expansion occurred despite the loss of 12,700 positions in the manufacturing sector. Government (casino jobs) and services experienced most, if not all, the employment growth, increasing by 16,100 jobs and 7,500 jobs, respectively, between 1988 and 1998. This employment transition had a significant impact on the composition of the regional economic base. In 1998, the goods producing industries represented only 21% of total employment in comparison to 33% in 1988. On the other hand, employment in the services producing industries reflected 79% of the employment base in 1998, versus only 67% in 1988.

As the data in Table 3 reveals, most of the increases in employment occurred between 1993 and 1997 as total employment grew by 10.9 percent, indicating an average annual growth rate of 2.7%. The data for 1998 indicates continued growth in total employment, however, at a more modest pace of 1.9% per year.

Table 3
Total Non-Agriculture Employment
New London-Norwich LMA

	Employment				Number Change			Percent Change		
As of June:	1988	1993	1997	1998	1988-93	1993-97	1997-98	1988-93	1993-97	1997-98
Goods Producing	43,150	32,000	29,800	29,200	(11,150)	(2,200)	(600)	-25.8%	-6.9%	-2.0%
Construction	6,011	3,500	4,700	4,800	(2,511)	1,200	100	-41.8%	34.3%	2.1%
Manufacturing	37,139	28,500	25,100	24,400	(8,639)	(3,400)	(700)	-23.3%	-11.9%	-2.8%
Durable	N/A	18,800	15,400	14,600	N/A	(3,400)	(800)	N/A	-18.1%	-5.2%
Non-durable	N/A	9,700	9,700	9,800	N/A	0	100	N/A	0.0%	1.0%
Services Producing	88,878	93,000	108,800	112,100	4,122	15,800	3,300	4.6%	17.0%	3.0%
TCPU [1]	5,523	5,500	6,600	6,800	(23)	1,100	200	-0.4%	20.0%	3.0%
Wholesale Tr.	3,075	2,700	2,700	2,800	(375)	0	100	-12.2%	0.0%	3.7%
Retail Trade	26,902	24,400	26,100	26,100	(2,502)	1,700	0	-9.3%	7.0%	0.0%
FIRE [2]	4,499	3,900	3,800	3,900	(599)	(100)	100	-13.3%	-2.6%	2.6%
Services	28,468	32,100	35,000	36,000	3,632	2,900	1,000	12.8%	9.0%	2.9%
Government [3]	20,411	24,400	34,200	36,500	3,989	9,800	2,300	19.5%	40.2%	6.7%
Total	132,028	125,000	138,600	141,300	(7,028)	13,600	2,700	-5.3%	10.9%	1.9%

N/A - Not Available
[1] Transportation, Communication and Public Utilities
[2] Finance, Insurance and Real Estate
[3] Government employment includes Foxwoods and Mohegan Sun
Source: Connecticut Department of Labor, Office of Research, and RKG Associates, Inc.

The employment changes in manufacturing are attributed primarily to the downsizing of the workforce at Electric Boat in Groton. Employment levels at this facility have declined from a peak of 18,500 persons in the mid-1980s to a current level of nearly 7,800 persons. In addition, employment declines are also attributed to local contractors that were displaced and/or downsized, when the Naval Undersea Warfare Center (NUWC) closed in 1996.

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Manufacturing	37,139	28,500	25,100	24,400	(8,639)	(3,400)	(700)	-23.3%	-11.9%	-2.8%
Durable	N/A	18,500	15,400	14,600	N/A	(3,400)	(800)	N/A	-18.1%	-5.2%
Non-durable	N/A	9,700	9,700	9,800	N/A	0	100	N/A	0.0%	1.0%
Services Producing	88,878	93,000	108,800	112,100	4,122	15,800	3,300	4.6%	17.0%	3.0%
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Total	132,008	125,000	138,600	141,300	(7,028)	13,600	2,700	-5.3%	10.9%	1.9%

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The major increases in employment are linked to the introduction of the gaming industry in Ledyard in 1992 and subsequent expansion to Montville (Uncasville) in 1996. Service employment gains can also be attributed to hotel, medical and business services in the region. In addition, employment in the retail trade sector has improved since 1993, resulting from the advent of some national chains and big box retailers in the early 1990s. This shift in retail expansion to the suburbs, coupled with the opening of the Crystal Mall in the early 1980s, has impacted downtown areas in the region, including the City of New London.

Since its opening in February, 1992, Foxwoods Casino has spearheaded the economic recovery of the region, and has contributed significantly to the State's financial coffers. The casino is presently billed as the "world's largest", and averages between 50,000 and 70,000 persons per day. Employment has grown from an initial staff of 2,400 in 1992 to its current level of over 10,000 persons and the annual payroll exceeds $300 million. The State has benefited from more than $500 million in payments, as part of a 1993 agreement, as well as more than $42 million in payroll-related taxes. The State has also received more than $18 million in income taxes from casino employees. In addition, it is reported that more than $500 million has been spent by the casino on goods and services with local, regional and national companies[2]. In addition to these benefits, the Mashantucket Pequots have become a major player in the regional real estate market as discussed later in the market analysis portion of this report. However, to date, the City of New London has not been a major beneficiary of this growth.

a. Local Economic Conditions

The City of New London remains a major center for service related industries in the New London LMA. Economic conditions, however, remain soft despite the regional economic recovery. In fact, employment levels in 1997 (16,600 jobs) for the City have declined by 3,100 jobs since 1988 (19,700 jobs). The proposed opening of Pfizer-New London in 2005 should correct these losses and re-establish the City=s manufacturing base as well as anchor additional development activity.

Employment data for the years 1988, 1993 and 1997 are summarized in Table 4, based on different industry sectors. For comparison purposes the data represents employment as of June of each year. Employment data for 1998 for the City of New London will not be available until later in 1999.

Between 1988 and 1993, total employment in the City declined by 1,600 jobs, despite an increase of 1,340 positions in service industries. Total employment also declined by another 1,500 positions between 1993 and 1997, despite an increase of nearly 400 positions in the durable manufacturing sector, which is contrary to regional trends. This growth is likely attributed to the Pequot River Shipworks, which manufactures high speed ferries in the former Thames Valley Steel property adjacent to the State Pier. However, employment in manufacturing industries represents only a small percentage of total employment in the City of New London. In fact, as shown in Table 4,

2 Source: An Associated Press article in the *Boston Globe* February 17, 1997.

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employment in goods producing industries represented 8% of total employment in 1988, and 5% in 1997.

The service producing sectors have also experienced employment declines between 1993 and 1997, despite regional trends to the contrary. Most of this decline can be attributed to the closing of the Navel Underwater Warfare Center in 1996, when more than 1,000 jobs at the NUWC were transferred to Newport, Rhode Island.

Table 4
Total Non-Agriculture Employment
City of New London

	Employment			Numeric Change		Percent Change	
	1988	1993	1997	1988-93	1993-97	1988-93	1993-97
Goods Producing	1,530	740	910	(790)	170	-51.6%	23.0%
Construction	490	150	180	(340)	30	-69.4%	20.0%
Manufacturing	1,040	590	730	(450)	140	-43.3%	23.7%
Durable	470	150	530	(320)	380	-68.1%	253.3%
Non-durable	580	440	200	(140)	(240)	-24.1%	-54.5%
Services Producing	18,140	17,350	15,680	(790)	(1,670)	-4.4%	-9.6%
TCPU [1]	1,500	960	1,220	(540)	260	-36.0%	27.1%
Wholesale Trade	530	510	410	(20)	(100)	-3.8%	-19.6%
Retail Trade	3,180	2,740	2,780	(440)	40	-13.8%	1.5%
FIRE [2]	1,020	730	450	(290)	(280)	-28.4%	-38.4%
Services	7,040	8,380	7,870	1,340	(510)	19.0%	-6.1%
Government	4,870	4040	2,950	(830)	(1,090)	-17.0%	-27.0%
Total	19,700	18,090	16,590	(1,610)	(1,500)	-8.2%	-8.3%

N/A - Not Available
[1] Transportation, Communication and Public Utilities
[2] Finance, Insurance and Real Estate
Source: Connecticut Department of Labor, Office of Research, and RKG Associates, Inc.

In fact, between 1988 and 1997, more than 1,900 government sector jobs have been lost in the City. Declines in government employment account for 62% of total jobs lost between 1988 and 1997. Also, during this time period, employment in the financial, insurance and real estate (FIRE) sectors declined by nearly 600 positions. This decline is due primarily to consolidation in the banking industry after failures suffered in the early 1990s.

It should be added that the City of New London is characterized as an employment center since more jobs exist in the City, than the number of local residents in the labor force. For example in 1997, there were 16,600 jobs provided at businesses located within New London in comparisons to only 12,700 persons in the labor force that lived in the City.

Conclusion: Since 1988, the employment base for the City of New London has been significantly impacted by government sector job losses (1,900), primarily attributed to the closing of NUWC. However, the proposed 2,000 jobs at the Pfizer New London facility should negate historic losses and provide an opportunity for economic revitalization in the City.

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Construction	900	150	180	(340)	30	-80.0%	20.0%
Manufacturing	1,000	590	730	(410)	140	-41.0%	23.7%
Durable	470	150	330	(320)	180	-68.1%	120.0%
Non-durable	530	440	200	(110)	(240)	-20.8%	-54.5%
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Services	7,040	8,350	7,830	1,310	(520)	18.6%	-6.2%
Government	4,570	4,010	2,930	(560)	(1,080)	-12.3%	-27.0%
Total	19,570	18,090	16,500	(1,480)	(1,590)	-7.6%	-8.8%

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b. Regional Employment Forecasts

In 1997, the Connecticut Department of Labor, based on existing employment in 1996, published ten year projections for employment changes throughout the various regions of the State. These projections were also based on a macro level analysis of local, regional and national trends. Employment projections, however, were not prepared for the municipal level. These projections are utilized for planning purposes by local and regional planners and development professional. The City of New London and the New London LMA are located within the Eastern Region and the following section analyzes these projections. In summary, total employment for the Eastern Region of Connecticut is projected to increase by 14% over the next ten years, indicating an average annual growth of 1.4%. For the purpose of the analysis agriculture employment has been omitted.

The State of Connecticut has identified six industry clusters that should stimulate future economic growth. These industry clusters include: 1) Financial Services, 2) Health Services, 3) High Technology, 4) Manufacturing, 5) Telecommunications and Information, and 6) Tourism. These groups also represent the major industry sectors that will be the focus of State marketing efforts, as well as development incentives, in order to increase the State=s economic competitiveness.

Table 5 presents Eastern Regional employment projections for those industries that would typically use industrial buildings. It should be noted that the individual sectors under the major industry types are sorted by estimated percentage change over the next ten years.

Construction: Employment levels in this industry are projected to increase by 25% over the next ten years. This increase is supported by recent trends in the New London LMA and the City between 1993 and 1997, when construction employment increased by 34% and 20%, respectively.

Manufacturing: Historic trends in manufacturing in the LMA and the City of New London are contrasting. There has been a marginal increase in employment at the regional level in non-durable industries versus an increase at the City level in the durable industries, which is declining regionally.

> **Durable Goods** employment is projected to decline by 8% over the next ten years, due primarily to projected losses in the Transportation Equipment industry. However, these losses are forecasted to be offset by cumulative gains in the Electronic and Industrial Machinery industries. The projected decline in Durable Goods employment over the next ten years is supported by trends that occurred between 1993 and 1997 in the New London LMA, which experienced a decline of 18%.
>
> **Non-Durable Goods** employment is projected to increase by 6% over the next ten years, due primarily to increases in Food Products and Chemical Products. It should be noted that the net change in Chemical Products employment is approximately 420 positions over the next 10 years, reflecting Pfizer expansion at the Groton facility. This projected employment increase, however, does not account for the proposed 2,000 jobs at Pfizer-New London. Employment declines are anticipated in Textile Mill industries.

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Manufacturing: Historic trends in manufacturing in the LMA and the City of New London are contrasting. There has been a marginal increase in employment at the regional level in non-durable industries versus an increase at the City level in the durable industries, which is declining regionally.

Durable Goods employment is projected to decline by 8%% over the next ten years, due primarily to projected losses in the Transportation Equipment industry. However, these losses are forecasted to be offset by cumulative gains in the Electronic and Industrial Machinery industries. The projected decline in Durable Goods employment over the next ten years is supported by trends that occurred between 1993 and 1997 in the New London LMA, which experienced a decline of 18%%.

Non-Durable Goods employment is projected to increase by 6%% over the next ten years, due primarily to increases in Food Products and Chemical Products. It should be noted that the net change in Chemical Products employment is approximately +420 positions over the next 10 years, reflecting Pfizer expansion at the Groton facility. This projected employment increase, however, does not account for the proposed 2,000 jobs at Pfizer-New London. Employment declines are anticipated in Textile Mill industries.

Table 5
Industry Employment Projections Eastern Region of Connecticut
1996 – 2006

Industry Type	Employment 1996	Employment 2006	Net Change	% Change	Annual Change
Construction	**4,583**	**5,740**	**1,157**	**25.25%**	**2.53%**
General Building Contractors	854	1,197	343	40.16%	4.02%
General Contractors (exc. Bldg)	861	1,052	191	22.18%	2.22%
Special Trade Contractors	2,868	3,491	623	21.72%	2.17%
Durable Goods Manufacturing	**19,691**	**18,161**	**(1,530)**	**-7.77%**	**-0.78%**
Electronic & Other Electrical Equip	1,021	1,128	107	10.48%	1.05%
Industrial Machinery & Equipment	1,379	1,494	115	8.34%	0.83%
Fabricated Metal Products	1,026	1,071	45	4.39%	0.44%
Stone, Clay and Glass	866	896	30	3.46%	0.35%
Primary Metal Industries	2,247	2,219	(28)	-1.25%	-0.12%
Instruments and Related Products	1,088	967	(121)	-11.12%	-1.11%
Transportation Equipment	11,493	9,783	(1,710)	-14.88%	-1.49%
Nondurable Goods Manufacturing	**10,976**	**11,595**	**619**	**5.64%**	**0.56%**
Food & Kindred Products	1,380	1,591	211	15.29%	1.53%
Chemicals & Allied Products	4,070	4,489	419	10.29%	1.03%
Paper & Allied Products	1,317	1,380	63	4.78%	0.48%
Printing & Publishing	1,659	1,668	9	0.54%	0.05%
Rubber & Misc. Plastic Products	1,565	1,569	4	0.26%	0.03%
Textile Mill Products	536	428	(108)	-20.15%	-2.01%
Trans., Comm, Public Utilities	**7,481**	**8,227**	**746**	**9.97%**	**1.00%**
Local & Interurban Transit	1,099	1,323	224	20.38%	2.04%
Trucking & Warehousing	1,390	1,591	201	14.46%	1.45%
Communications	1,102	1,207	105	9.53%	0.95%
Utilities & Sanitary Services	2,461	2,625	164	6.66%	0.67%
U.S. Postal Service	673	645	(28)	-4.16%	-0.42%
Wholesale Trade	**3,275**	**3,498**	**223**	**6.81%**	**0.68%**
Wholesale Trade, Nondurable	1,608	1,741	133	8.27%	0.83%
Wholesale Trade, Durable	1,667	1,757	90	5.40%	0.54%

Source: Connecticut Department of Labor

Transportation, Communication and Public Utilities (TCPU) employment is forecasted to increase by 10% over the next ten year. This change is primarily attributed to increases in most industries in this sector (Transit, Trucking, Communications and Utilities Services). The forecasted change is supported by employment changes in this sector between 1993 and 1997, for the New London LMA (20%) and the City of New London (27%). This increase

Table 5
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1996 – 2006

Industry Type	Employment 1996	Employment 2006	Net Change	% Change	Annual Change
Construction	4,583	5,740	1,157	25.24%	2.43%
General Building Contractors	854	1,197	343	40.16%	4.02%
General Contractors (exc. Bldg)	861	1,052	191	22.18%	2.22%
Special Trade Contractors	2,868	3,491	623	21.72%	2.17%
Durable Goods Manufacturing	19,691	18,161	(1,530)	-7.77%	-0.78%
Electronic & Other Electrical Equip	1,021	1,128	107	10.48%	1.05%
Industrial Machinery & Equipment	1,379	1,494	115	8.34%	0.83%
Fabricated Metal Products	1,026	1,071	45	4.39%	0.44%
Stone, Clay and Glass	866	896	30	3.46%	0.35%
Primary Metal Industries	2,247	2,219	(28)	-1.25%	-0.12%
Instruments and Related Products	1,088	967	(121)	-11.12%	-1.11%
Transportation Equipment	11,493	9,783	(1,710)	-14.88%	-1.49%
Nondurable Goods Manufacturing	10,976	11,395	419	3.64%	0.36%
Food & Kindred Products	1,380	1,591	211	15.29%	1.53%
Chemicals & Allied Products	4,070	4,489	419	10.29%	1.03%
Paper & Allied Products	1,317	1,380	63	4.78%	0.48%
Printing & Publishing	1,659	1,668	9	0.54%	0.05%
Rubber & Misc. Plastic Products	1,565	1,569	4	0.26%	0.03%
Textile Mill Products	536	428	(108)	-20.15%	-2.01%
Trans., Comm., Public Utilities	7,488	8,227	740	9.87%	1.00%
Local & Interurban Transit	1,099	1,323	224	20.38%	2.04%
Trucking & Warehousing	1,390	1,591	201	14.46%	1.45%
Communications	1,102	1,207	105	9.53%	0.95%
Utilities & Sanitary Services	2,461	2,625	164	6.66%	0.67%
U.S. Postal Service	677	615	(62)	-9.16%	-0.92%
Wholesale Trade	3,275	3,498	223	6.81%	0.68%
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should benefit the City of New London, given the City=s strategy for marketing the community as a regional transportation center.

Wholesale Trade employment is projected to increase by 7% over the next ten years. This increase is supported by employment changes in the LMA (4%) over the last year.

Table 6 summarizes projected ten-year employment gains for the Eastern Region of Connecticut in those industrial sectors that would require office space and/or retail/commercial service buildings. The following section analyzes the projected ten-year changes by major industry group. The individual sectors under the major industry types are sorted by estimated percentage change over the next ten years.

Retail Trade employment is anticipated to increase by 13% over the next ten years. This includes increases in all sectors including a 21% increase in General Merchandise employment and an 18% increase in restaurant employment. This increase is supported by recent trends in retail employment in the New London LMA, which experienced a 7% gain between 1993-1997. In contrast to this regional trend, retail employment in the City of New London experienced only a 1.5% increase during this four year period.

Finance, Insurance and Real Estate (FIRE) employment is anticipated to increase by 12% over the next ten years, as shown in Table 6. Most of this increase is anticipated in the real estate sector, and to a lesser extent in banking and insurance. While recent trends (1993 - 1996) in the New London LMA and City suggests otherwise, employment changes between 1997 and 1998 at the regional level indicate some growth in this sector that would support these ten year figures.

Services employment is anticipated to increase by 24% over the next ten years. The hotel and lodging sector is forecasted to increase by more than 84%. In addition, amusement and recreation services (i.e. casinos) employment is projected to increase by nearly 7,000 jobs over the next ten years.[3] The employment gain for this sector represents nearly 30% of total projections for the Eastern Region of Connecticut. This anticipated ten-year increase appears reasonable given the 14,000 to 16,000 jobs that have been created since 1992. This forecasted increase would also seem applicable to the City of New London, given the plan to upgrade and expand Ocean Beach Park. This projected increase also reflects the State=s effort in targeting tourism as a primary industry cluster.

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3 For these projections, employment at Foxwoods and Mohegan Sun are categorized by the Connecticut Department of Labor as amusement and recreational services, instead of government.

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[3] For these projections, employment at Foxwoods and Mohegan Sun are categorized by the Connecticut Department of Labor as amusement and recreational services, instead of government.

Table 6
Industry Employment Projections
Eastern Region of Connecticut
1996 – 2006

Industry Type	Employment 1996	Employment 2006	Net Change	% Change	Annual Change
Retail Trade	**28,343**	**32,064**	**3,721**	**13.13%**	**1.31%**
General Merchandise Store	2,916	3,515	599	20.54%	2.05%
Eating & Drinking Places	8,995	10,602	1,607	17.87%	1.79%
Building Materials & Garden Sup.	933	1,050	117	12.54%	1.25%
Miscellaneous Retail	4,805	5,360	555	11.55%	1.16%
Furniture & Homefurnishings	903	1,001	98	10.85%	1.09%
Auto Dealers & Service Stations	3,156	3,422	266	8.43%	0.84%
Food Stores	5,453	5,883	430	7.89%	0.79%
Apparel & Accessories Stores	1,182	1,231	49	4.15%	0.41%
Finance, Insurance & Real Estate	**4,080**	**4,583**	**503**	**12.33%**	**1.23%**
Real Estate	1,006	1,192	186	18.49%	1.85%
Depository Institutions	1,870	2,000	130	6.95%	0.70%
Ins. Agents, Brokers & Services	630	666	36	5.71%	0.57%
Services	**78,999**	**97,736**	**18,737**	**23.72%**	**2.37%**
Hotels & Other Lodging Places	1,814	3,346	1,532	84.45%	8.45%
Amusement & Recreation Serv.	13,073	20,061	6,988	53.45%	5.35%
Social Services	3,723	5,146	1,423	38.22%	3.82%
Engineering & Management Serv.	2,849	3,738	889	31.20%	3.12%
Business Services	5,251	6,841	1,590	30.28%	3.03%
Health Services	13,567	16,457	2,890	21.30%	2.13%
Auto Repair, Services & Parking	931	1,127	196	21.05%	2.11%
Membership Organization	2,183	2,534	351	16.08%	1.61%
Self-employed, private hshlds	13,568	15,190	1,622	11.95%	1.20%
Personal Services	1,395	1,539	144	10.32%	1.03%
Museums, Botanical, Zoo	561	615	54	9.63%	0.96%
Legal Services	940	1,006	66	7.02%	0.70%
Educational Services	18,566	19,446	880	4.74%	0.47%
Government	**12,068**	**12,188**	**120**	**0.99%**	**0.10%**
Local Gov. (exc. educ. & hosp.)	4,449	4,675	226	5.08%	0.51%
State Gov. (exc. educ. & hosp.)	4,440	4,405	(35)	-0.79%	-0.08%
Federal Gov. (exc. postal)	3,179	3,108	(71)	-2.23%	-0.22%
Total Industries [1]	**169,496**	**193,792**	**24,296**	**14.33%**	**1.43%**

[1] excludes Agriculture
Source: Connecticut Department of Labor

Table 6
Industry Employment Projections
Eastern Region of Connecticut
1996 – 2006

	Employment		Net	%	Annual
Industry Type	1996	2006	Change	Change	Change
Retail Trade	**28,343**	**32,064**	**3,721**	**13.13%**	**1.31%**
General Merchandise Store	2,916	3,515	599	20.54%	2.05%
Eating & Drinking Places	8,995	10,602	1,607	17.87%	1.79%
Building Materials & Garden Sup.	933	1,050	117	12.54%	1.25%
Miscellaneous Retail	4,805	5,360	555	11.55%	1.16%
Furniture & Homefurnishings	905	1,001	96	10.85%	1.09%
Auto Dealers & Service Stations	3,156	3,422	266	8.43%	0.84%
Food Stores	5,453	5,883	430	7.89%	0.79%
Apparel & Accessories Stores	1,182	1,231	49	4.15%	0.41%
Finance, Insurance & Real Estate	**4,080**	**4,583**	**503**	**12.33%**	**1.23%**
Real Estate	1,006	1,192	186	18.49%	1.85%
Depository Institutions	1,870	2,000	130	6.95%	0.70%
Ins. Agents, Brokers & Services	630	666	36	5.71%	0.57%
Services	**78,999**	**97,736**	**18,737**	**23.72%**	**2.37%**
Hotels & Other Lodging Places	1,814	3,346	1,532	84.45%	8.45%
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Social Services	3,723	5,146	1,423	38.22%	3.82%
Engineering & Management Serv.	2,849	3,738	889	31.20%	3.12%
Business Services	5,251	6,841	1,590	30.28%	3.03%
Health Services	13,567	16,457	2,890	21.30%	2.13%
Auto Repair, Services & Parking	951	1,127	196	21.05%	2.11%
Membership Organization	2,183	2,534	351	16.08%	1.61%
Self-employed, private households	13,563	15,190	1,627	11.95%	1.20%
Personal Services	1,395	1,539	144	10.32%	1.03%
Museums, Botanical, Zoo	561	615	54	9.63%	0.96%
Legal Services	940	1,006	66	7.02%	0.70%
Educational Services	18,566	19,446	880	4.74%	0.47%
Government	**12,068**	**12,188**	**120**	**0.99%**	**0.10%**
Local Gov. (exc. educ. & hosp.)	4,449	4,675	226	5.08%	0.51%
State Gov. (exc. educ. & hosp.)	4,440	4,405	(35)	-0.79%	-0.08%
Federal Gov. (exc. postal)	3,179	3,108	(71)	-2.23%	-0.22%
Total Industries [1]	**169,496**	**193,792**	**24,296**	**14.33%**	**1.43%**

[1] excludes Agriculture
Source: Connecticut Department of Labor

Other major service industries that are projected to experience increased employment over the next ten years include Social Services (38%), Engineering Services (31%), Business Services (30%) and Health Services (21%). In fact, employment in all service sectors, as shown in Table 6, are projected to increase over the next ten years. This trend is supported by regional and local data.

Government employment is anticipated to increase by 1% over the next ten years.

The employment growth factors discussed above appear consistent with regional employment trends, and to a lesser degree with local trends, although 1998 data at the municipal level is currently not available. Applying these factors against employment levels for 1997, provides an indication of potential ten year growth in regional and local markets.

For the New London LMA, total employment is anticipated to increase to 157,800 positions over the next ten years, reflecting a 13% increase. The majority of new employment is forecasted in the services producing industries (16,700 jobs), although goods producing employment is forecasted to have a net increase of 500 jobs.

The City of New London=s employment base is anticipated to increase to 21,000 jobs in 2007, reflecting a gain of more than 4,460 positions. Most of this increase is forecasted to occur in the service producing sectors. By 2007 forecasted employment in the service producing industries (18,100) will return to 1988 levels for the City of New London. Service industries, such as hotel, medical and business services account for 42% of the forecasted growth or 1,870 jobs. Retail services are also forecasted to reflect an 8% growth or 365 jobs. This growth in the service producing sectors appears consisted with regional trends over the last 10 years. It should be noted that minimal growth is forecasted for the manufacturing or goods producing sectors.

Table 7
Projected Employment (1997 - 2007)
New London-Norwich LMA

As of June,	1997	Projected Factor [5]	2007	Change 1997-2007 Number	Change 1997-2007 Percent
Goods Producing	29,800		32,337	2,537	8.5%
Construction	4,700	1.2525	5,887	1,187	25.3%
Manufacturing	25,100		26,451	1,350	5.4%
Durable	15,400	0.9223	14,203	(1,197)	-7.8%
Nondurable [1]	9,700	1.0564	12,247	2,547	26.3%
Services Producing	108,800		125,496	16,696	15.3%
TCPU [2]	6,600	1.0852	7,162	562	8.5%
Wholesale Trade	2,700	1.0681	2,884	184	6.8%
Retail Trade	26,100	1.1313	29,527	3,427	13.1%
FIRE [3]	3,800	1.1233	4,269	469	12.3%
Services [4]	50,000	1.2372	61,860	11,860	23.7%
Government	19,600	1.0099	19,794	194	1.0%
Total w/ Pfizer	138,600		157,833	19,233	13.9%

City of New London
Projected Employment (1997 -2007)

As of June,	1997	Projected Factor [5]	2007	Change 1997-2007 Number	Change 1997-2007 Percent
Goods Producing	910		2,926	1,970	216.5%
Construction	180	1.2525	225	45	25.3%
Manufacturing	730		2,700	1,970	269.9%
Durable	530	0.9223	489	(41)	-7.8%
Nondurable [1]	200	1.0564	2,211	2,011	1,005.5%
Services Producing	15,680		18,128	2,448	15.6%
TCPU [2]	1,220	1.0852	1,324	104	8.5%
Wholesale Trade	410	1.0681	438	28	6.8%
Retail Trade	2,780	1.1313	3,145	365	13.1%
FIRE [3]	450	1.1233	505	55	12.3%
Services	7,870	1.2372	9,737	1,867	23.7%
Government	2,950	1.0099	2,979	29	1.0%
Total w/Pfizer	16,590		21,054	4,464	26.9%

[1] 2007 nondurable employment figures are adjusted by 2,000 resulting from Pfizer New London
[2] Transportation, Communication and Public Utilities
[3] Finance, Insurance and Real Estate
[4] Services in the LMA include 15,000 persons for Foxwoods and Mohegan Sun
[5] Based on an employment growth factor from 1996 - 2006 projections
Source: Connecticut Department of Labor and RKG Associates, Inc.

Table 7
Projected Employment (1997 - 2007)
New London-Norwich LMA

As of June	1997	Projected Factor [5]	2007	Change 1997-2007 Number	Change 1997-2007 Percent
Goods Producing	29,800		32,327	2,527	8.5%
Construction	4,700	1.2525	5,887	1,187	25.3%
Manufacturing	25,100		26,451	1,350	5.4%
Durable	15,400	0.9225	14,203	(1,197)	-7.8%
Nondurable [1]	9,700	1.0564	12,247	2,547	26.3%
Service Producing	108,500		125,496	16,996	15.7%
TCPU [2]	6,600	1.0852	7,162	562	8.5%
Wholesale Trade	2,700	1.0681	2,884	184	6.8%
Retail Trade	26,100	1.1313	29,527	3,427	13.1%
FIRE [3]	3,800	1.1223	4,266	466	12.3%
Services [4]	50,000	1.2272	61,866	11,866	23.7%
Government	19,600	1.0099	19,794	194	1.0%
Total w/ Fitzer	138,600		157,823	19,223	13.9%

City of New London
Projected Employment (1997 - 2007)

As of June	1997	Projected Factor [5]	2007	Change 1997-2007 Number	Change 1997-2007 Percent
Goods Producing	910		2,976	1,970	216.5%
Construction	180	1.2525	225	45	25.0%
Manufacturing	730		2,700	1,970	269.9%
Durable	550	0.9225	486	(64)	-7.0%
Nondurable [1]	200	1.0564	2,214	2,014	1,007.0%
Service Producing	15,680		18,128	2,448	15.6%
TCPU [2]	1,224	1.0852	1,324	100	8.2%
Wholesale Trade	410	1.0681	438	28	6.8%
Retail Trade	2,740	1.1313	3,145	365	13.3%
FIRE [3]	450	1.1223	505	55	12.2%
Services	7,820	1.2272	9,727	1,907	24.3%
Government	2,950	1.0099	2,979	29	1.0%
Total w/ Fitzer	16,590		21,054	4,464	26.9%

[1] 2007 nondurable goods over Fitzer are adjusted by 2,000 resulting from Fitzer New London.
[2] Transportation, Communication and Public Utilities
[3] Finance, Insurance and Real Estate
[4] Services in the LMA include 15,000 jobs for Foxwoods and Mohegan Sun
[5] Based on an employment growth factor from 1995 - 2006 projections
Source: Connecticut Department of Labor and RKG Associates, Inc.

D. Neighborhood and Site Description

The State Pier property is located within a diverse, mixed used neighborhood where minimal investment has occurred until the recent multi-million modernization of the State Pier property. From a locational perspective the neighborhood is at the western base of the Interstate 95 bridge, less than a half a mile from downtown New London. The neighborhood, for this analysis, consists of approximately 85 acres that is fairly evenly divided into two sections. The southern portion which includes the State Pier property is basically a peninsula that is bounded on the north by the raised Conrail/Amtrak right-of-way. The northern portion consists of an industrial area that extends under the I-95 elevated bridge and beyond Lewis Street. The boundaries used in this analysis basically follow the existing zoning district for this portion of New London as well as most of the City's designated area for a Free Trade Zone.

1. **Access:** Primary access to the neighborhood can be gained via Crystal Avenue through its signalized intersection with Eugene O'Neill Drive, which is the major connector between Interstate 95, State Route 32 and downtown New London. Crystal Avenue is a two-lane road that head northeast along the western boundary of the neighborhood after its immediate intersection with State Pier Road. Secondary or backdoor access to the neighborhood can be provided by State Pier Road which intersects State Route 32 further to the north. Overall, access to the neighborhood for a driver unfamiliar with the New London road network, appears somewhat convoluted, due in part to the intersecting major highways in this vicinity. Changes proposed as part of the State Pier MDP are expected to reduce confusion and improve traffic flows in the neighborhood.

2. **Primary Uses and Trends:** Maritime and transportation related uses appear to utilize a majority of the land area. Assessment records indicate that Central Vermont Railway is the largest single land owner in the neighborhood. The Company has approximately 35 acres, consisting of its pier, former roundhouse and extensive rail right-of-ways leading north from its pier.

A mix of single family and duplex properties are located beyond the northwestern boundary. There is also an enclave of fourteen residential structures, abutting the State Pier site, most of which are in generally poor physical condition.

Along the internal streets in the northern portion, the neighborhood appears fairly densely developed with industrial properties. In fact, research indicated there were eleven industrial properties in this area[4], containing roughly 15 acres improved with nearly 400,000 SF of building area, indicated a floor area ratio (or FAR) of 60%. Most of the buildings are along the east side of Crystal Avenue (Levin Distribution; Naval R & D annex; Bell Pump) or off Lewis Street/Eastern Ave. (Thames Valley Steel; F & F Distributors). The City of New London's Department of Public Works maintains a garage, storage yard, office area and a sanitation transfer facility directly below the I-95 bridge. A majority of the buildings in this portion of the neighborhood are regarded as modern, or post-1965 construction.

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4 These eleven properties total approximately $7.75 million in assessment value ($21.50/SF) and contribute nearly $21,500 in annual real estate taxes. This figure equates to roughly $0.60/SF of improved building area or $14,500/acre of improved land.

The State Pier property is located within a diverse, mixed used neighborhood where minimal investment has occurred until the recent multi-million modernization of the State Pier property. From a locational perspective the neighborhood is at the western base of the Interstate 95 bridge, less than a half a mile from downtown New London. The neighborhood, for this analysis, consists of approximately 85 acres that is fairly evenly divided into two sections. The southern portion which includes the State Pier property is basically a peninsula that is bounded on the north by the raised Conrail/Amtrak right-of-way. The northern portion consists of an industrial area that extends under the I-95 elevated bridge and beyond Lewis Street. The boundaries used in this analysis basically follow the existing zoning district for this portion of New London as well as most of the City's designated area for a Free Trade Zone.

1. Access: Primary access to the neighborhood can be gained via Crystal Avenue through its signalized intersection with Eugene O'Neill Drive, which is the major connector between Interstate 95, State Route 32 and downtown New London. Crystal Avenue is a two-lane road that bend northeast along the western boundary of the neighborhood after its immediate intersection with State Pier Road. Secondary or backdoor access to the neighborhood can be provided by State Pier Road which intersects State Route 32 further to the north. Overall, access to the neighborhood for a driver unfamiliar with the New London road network, appears somewhat convoluted, due in part to the intersecting major highways in this vicinity. Changes proposed as part of the State Pier MDP are expected to reduce confusion and improve traffic flows in the neighborhood.

2. Primary Uses and Trends: Maritime and transportation related uses appear to utilize a majority of the land area. Assessment records indicate that Central Vermont Railway is the largest single land owner in the neighborhood. The Company has approximately 35 acres, consisting of its pier, former roundhouse and extensive rail right-of-ways leading north from its pier.

A mix of single family and duplex properties are located beyond the northwestern boundary. There is also an enclave of fourteen residential structures, abutting the State Pier site, most of which are in generally poor physical condition.

Along the internal streets in the northern portion, the neighborhood appears fairly densely developed with industrial properties. In fact research indicated there were eleven industrial properties in this area[1], containing roughly 15 acres improved with nearly 400,000 SF of building area, indicated a floor area ratio (or FAR) of 60%. Most of the buildings are along the east side of Crystal Avenue (Levin Distribution; Naval R & D annex; Bell Pump) or off Lewis Street/Eastern Ave. (Thames Valley Steel; T & F Distributors). The City of New London's Department of Public Works maintains a garage, storage yard, office area and a sanitation transfer facility directly below the I-95 bridge. A majority of the buildings in this portion of the neighborhood are regarded as modern, or post-1965 construction.

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[1] These eleven properties total approximately $2.75 million in assessment value ($21.50/SF) and contribute nearly $21,500 in annual real estate taxes. This figure equates to roughly 50.60/SF of improved building area or $14,500 acre of improved land.

The remaining 30 or so acres in this northern portion are generally undeveloped and utilized for transportation purposes with the majority owned by Central Vermont Railway. The State also maintains a boat launching area underneath the I-95 bridge, that is accessible only from State Pier Road via an underpass under Conrail's ROW. This is just to the north of the State Pier property. Including this transportation related land area, the effective Floor Area Ratio (FAR) in the northern portion of the neighborhood is reduced to 20% (400,000 SF/45 acres).

The southern portion of the neighborhood consists of approximately 40 acres and is divided (east to west) by the Central Vermont Railway property. Primary uses are transportation related with the exception of a small enclave of fourteen, aged and poorly maintained, residential structures (primarily duplexes), which occupy about two acres of land, surrounded by the State Pier property [5]. There are three major parcels in the southern portion of the neighborhood that include the State Pier parcel (14 acres), a portion of the Central Vermont Railway parcel (15 acres), and the City of New London (7 acres). In addition to these parcels, as well as the Conrail ROW, there is a small parcel of 1.45 acres on the west side of Thomas Griffin Road that is improved with a 15,000 SF research and development facility, which was formerly occupied by Tracor Inc.

Based on assessment data, there are slightly more than 190,000 SF of building improvements in the southern portion of the neighborhood, including 129,600 SF at the State Pier[6]. Given that the approximate land area is 40 acres, the overall FAR in this portion is approximately 11%, suggesting under-utilization of land from a real estate tax perspective. However, given the physical constraints caused by the numerous right-of-ways, topography, soil conditions and shoreline protection, it is unlikely industrial building coverage in this portion of the neighborhood would exceed 30% FAR. The major area in the neighborhood to accommodate future development is the property owned by Central Vermont Railroad.

E. Zoning and Land Use Regulatory Agencies

The State Pier site is located within the Waterfront Industrial (WI) Zone. Permitted uses include a array of maritime and transportation related uses including port facilities, rail yards, ferry boats, marinas, yacht clubs, boat sales and rentals. Industrial uses include water-dependant manufacturing operations, warehousing and the wholesale of alcohol, meats, produces and provisions. Accessory

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5 According to New London assessment records, fifteen parcels consisting of approximately 1.6 acres that are improved with 23 units. Ten of the buildings are reported as duplexes, three as single family residences, one is a closed commercial unit and one parcel is vacant, improved with an outbuilding. Total assessment value is $848,000 ($36,900/unit or $526,700/acre) which equates to $23,150 in annual real estate taxes ($14,350/acre).

The City of New London acquired one property (28 Fraser Street) that appears abandoned. Two other properties also transferred: 29 Eighth Street, a duplex having a gross area of 3,284 SF, sold in March, 1995 for $50,000 or $25,000 unit; and 78 Tenth Street, a single family unit having a gross area of 2,400 SF, transferred in January, 1995 for $24,000.

6 This figure reflects the change in building area at the pier resulting from demolition and proposed construction.

The remaining 20 or so acres in this northern portion are generally undeveloped and utilized for transportation purposes with the majority owned by Central Vermont Railway. The State also maintains a boat launching area underneath the I-95 bridge, that is accessible only from State Pier Road via an underpass under Conrail's ROW. This is just to the north of the State Pier property. Including this transportation related land area, the effective Floor Area Ratio (FAR) in the northern portion of the neighborhood is reduced to 20% (400,000 SF/45 acres).

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and recreational uses include parking facilities, parks and playgrounds (public & private). Additional uses are allowed, subject to a special permit, include commercial uses such as business and professional offices, restaurants, hotels and motels. The existing uses in the neighborhood, as well as at the State Pier property, appear consistent with the City's Zoning. However, the enclave of residential duplexes conflicts with permitted uses in this district. Another regulatory agency that would be involved in reviewing development proposals of waterfront properties is the Connecticut Department of Environmental Protection which is authorized to manage activities under the Coastal Zone Management Law.

F. Real Estate Market Analysis

The New London County real estate market, similar to the economic base, has been in transition and is now showing signs of recovery. Real estate values in general have been steadily increasing, although in most markets, values remain below those levels experienced in the late 1980s. In addition, the recession of the early 1990s has left a historical legacy of buildings trading well below their replacement costs. As a result, local lenders may be reluctant to make speculative real estate loans. The purpose of the section is to identify current market conditions and characteristics in regards to office, industrial, retail and commercial services and hospitality markets.

New London County is primarily dominated by end-users in terms of its real estate market. This is evidenced by the large and diverse facilities owned by the major employers located throughout the region, such as Pfizer Incorporated, General Dynamics, Foxwoods Resort and Casino, Mohegan Sun Casino, State of Connecticut, Dow Chemicals, U.S. Naval Submarine Base, U.S. Coast Guard Academy, Connecticut College, as well as Lawrence and Memorial Hospital.

Recent real estate activity by some of these regional employers include:

$ Pfizer's proposed New London facility, that will contain more than 500,000 square feet (SF), as well as an expansion at the company's Groton complex.

$ The Mashantucket Pequots Tribal Nation recently opened an 820 hotel room expansion at Foxwoods Resort, complete with 53,000 SF of conference space. In addition, a $190 million Mashantucket Pequot Museum and Research Center (310,000 SF) opened in August, 1998 adjacent to Foxwoods. A hotel development is planned in the City of Norwich, that is anticipated to be a cornerstone of downtown redevelopment in that community. The Mashantucket Pequot Tribal Nation also started a high-speed ferry manufacturing company in New London.

$ The Mohegan Tribal Nation recycled an idle industrial complex in Montville into a casino, which opened in October, 1996. Reportedly the Mohegan Tribal Nation is in the initial planning stages of a large scale hotel (1,500 rooms) and conference center development (75,000 SF) on their Thames River site; specific details are not available at this time. In addition, the State of Connecticut transferred the adjacent Fort Shantok State Park to the Mohegan Tribal Nation, who recently reopened the park to the public, after some minor

improvements. The Connecticut Department of Transportation is presently analyzing different transportation alternatives for the region, due to increased traffic associated with the casinos. The City of New London is one of the communities in the study area.

$ In addition to the recent renovation of the State Pier, a number of additional governmental initiatives are currently under way. In conjunction with Pfizer's creation of a Central Research facility on the former New London Mills site, the City is creating a Municipal Development Plan (MDP) for the Fort Trumbull area. This project includes the proposed Fort Trumbull State Park (being developed by the Connecticut Department of Environmental Protection), the redevelopment of the former Naval Undersea Warfare Center (NUWC), and other public and private properties in the Fort Trumbull Area, totaling 90 +/- acres. The City is also developing a Master Plan for the Downtown Area, and a revitalization strategy for Ocean Beach Park. The Harkness Mansion in Waterford has also undergone renovations. In addition, the State is in the process of transferring ownership, possibly to the private sector, of the former Norwich State Hospital and Seaside Regional Center in Waterford.

1. Available Commercial and Industrial Land

New London County has a supply of more than 1,200 acres of undeveloped non-residential land, with adequate infrastructure in place, to support long term commercial and industrial development. Most of this land is located along the Interstate 95 corridor in the Towns of Waterford, Groton and Stonington/North Stonington.

- The Norwich Industrial Park (off I-395), one of the more established industrial parks in the County, has approximately 80 acres available. This 450 acre park, initiated in the late 1960s, has a mixed tenant base including a few non-industrial users such as Dodd Stadium, which was constructed for the Norwich Navigators, a double A baseball team. Due to the park=s centralized location and convenient interstate access, other tenants include warehouse/distribution users. This park has a number of buildings available for sale or lease.

- In contrast the City of New London has only 15 acres of vacant land, including potential redevelopment sites. Most of the sites are small and scattered throughout the municipality. The City=s supply of commercial land could increase by another 20 to 40 acres with the inclusion of the different alternatives being evaluated for the Fort Trumbull Area.

- Currently, a 4.2 acre site is available adjacent to the State Pier property. There are also a number of available industrial buildings in this portion of the City, including a research and development structure, that was formerly leased by the U.S. Navy.

- A 3.2 acre parcel is also available at the Shaw=s Cove Business Park, about a mile south of the downtown. A proposal for a 72,000 SF office building was recently presented to the New London Redevelopment Authority, the owner of the parcel. The building is planned in two

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phases. A final proposal for the property, however, has not been presented and details regard the potential user(s) are unknown at this time.

- In addition, a four acre waterfront site adjacent to the downtown and the Shaw=s Cove Business Park is being marketed as a redevelopment project for a possible hotel or residential development. However, only a few buildings remain and no proposals have been presented.

- The former Norwich State Hospital, in the City of Norwich/Town of Preston, is not included in the regional supply of available land. Planned reuse alternatives for this 475∀ acre campus on the Thames River(across from the Mohegan Sun) includes entertainment, hospitality and retail uses. It should be noted that Three Rivers College in Norwich is interested in utilizing a portion of the site.

Industrial land pricing ranges from $20,000/acre to $50,000/acre. The cost for commercial land along the I-95 corridor, however, could yield a value of $200,000/acre or more. Location, size, topography, soil constraints, utilities available, etc. all affect values. Waterfront parcels may yield a value in the $200,000 to as much as $500,000/acre, although historic sales evidence does not support the high end premium.

In conclusion, the region has an adequate supply of commercial and industrial land for long term expansion. However, the supply in the City of New London is limited, and the operation of a successful cargo operation at the State Pier will require adequate support facilities, both in terms of warehousing and outdoor storage. The ability to create 150,000 square feet of warehouse and distribution space at the State Pier would allow for support of break-bulk cargo operations at the State Pier.

2. Available Commercial and Industrial Buildings

A regional supply of 2.5 million SF of non-residential buildings is available in the New London County market with 31 percent (764,000 SF) of this located in the City of New London. The remaining 69 percent (1.72 million SF) is scattered primarily between Norwich, Jewett City, Groton, and Waterford.[7]

Approximately 65% (1.62 million SF) of the total supply is considered industrial space of which only 7% (250,500 SF) is in the City of New London. From this perspective, it appears that the City of New London, which is a regional employment center, is under-served in terms of industrial facilities. In addition, the age of existing industrial facilities is a concern from a market perspective. Approximately 40% of the regional industrial supply is older mill-type complexes, while only 20% is post-1980 construction. There is only one available post-1980 industrial building (15,000 SF) in

[7] The term available means properties that are being actively listed or marketed for sale or lease. However, some of these buildings, or portions of them, may be currently occupied. Only two buildings at NUWC (Buildings 2 and 96), totaling 186,000 SF, are included in this supply. While it is anticipated that these facilities will ultimately be demolished, they are, at the present time, available.

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the City of New London. This suggests that there is a limited supply of quality industrial space for potential users not only in the City, but also in the County. According to discussions with regional real estate brokers, modern, high bay industrial and warehouse space has seen strong demand over the past two years, particularly where facilities are located in close proximity to Interstate 95.

Twenty-four percent (598,200 SF) of the total regional supply is office properties of which 62 % (371,400 SF) is within the City of New London. At the present time, there is a limited supply of available Class A office space in the remainder of the City of New London. According to regional real estate brokers, only 46,000 SF of Class A office space in New London is reported to be available.

The remaining 11% (265,615 SF) of the available regional building supply is classified as retail/commercial service buildings and nearly 54% (143,000 SF) of this space is located in the City of New London. A majority of this supply is ground floor space in the downtown area. Table 8 presents the distribution of available space in the region by area and use.

Table 8
Summary of Available Building Supply
New London County (August, 1998)

Area/Use	#	Bldg SF	% of City	% of Reg.
City of New London	**60**	**763,802**	100%	31%
Office	22	371,380	49%	15%
Retail/Comm. Serv.	27	142,962	19%	6%
Industrial	11	249,460	33%	10%
New London County [1]	**89**	**1,718,228**		69%
Office	37	226,813		9%
Retail/Comm. Serv.	26	122,653		5%
Industrial	26	1,368,762		55%
Regional (County) – Total	**149**	**2,482,030**		**100%**
Office	59	598,193		24%
Retail/Comm. Serv.	53	265,615		11%
Industrial	37	1,618,222		65%

[1] Does not include the available buildings in the City of New London
Source: RKG Associates, Inc. and MBIA/Bartram & Cochran

a. Office Buildings

Nearly 3.5 million SF of office buildings exists in the region, with 2.3 million SF suitable for multi-tenant use. Since 1982, over one million SF of office space was constructed in the market. It is reported that 740,000 SF is regarded as Class A. Most of this space is primarily located in the Groton-New London submarket, and a majority of the New London Class A office space is contained in the Shaw=s Cove Business Park, developed in the 1980s.

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a. Office Buildings

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An estimated 600,000 SF of office space is available to the market, including 371,400 SF in the City of New London. This includes 274,300 SF of Class A space, representing 74% of the available office space in the City. The major available Class A properties include three buildings in the Fort Trumbull Development Area (Buildings 2 and 96 at NUWC, as well as 194 Howard Street) having approximately 228,300 SF of available space. These three Class A buildings represent 60% of available office space in the City. However, the New London Development Corporation anticipates demolition of the existing structures at NUWC, to create new development parcels on the site. Approximately 46,000 SF of the available office space in the rest of New London is considered Class A, and the remaining 97,100 SF (58%) is Class B or lower office area, and most of this is located in the downtown area.

Real estate conditions in the City of New London have shown signs of modest recovery as evidenced by current occupancy at Class A office buildings, which is more than 90 percent at selected properties. However, occupancy at the older Class B and C buildings is lagging behind in the 70 to 80 percent range. In addition, rent levels at Class A properties have stabilized at approximately $15/SF (gross), however, they remain below the level needed to support new speculative construction. In addition, the historic sales values of Class A office space, created by the past imbalances in the market, have not recovered sufficiently to justify new construction except for an end-user.

Shaw=s Cove Business Park consists of six buildings, totaling approximately 300,000 SF, that were constructed in the mid-1980s. Historically, demand for office space typically came from local contractors, professional and business services that supported the defense-related industries. However, downsizing resulted in negative absorption of Class A office properties in the early 1990s which continued with the closing of NUWC in 1996. This created increased vacancies and placed downward pressures on rental pricing, making Class A properties affordable for Class B and C users. Currently, only 26,000 SF is available at Shaw=s Cove, indicating an occupancy rate of nearly 92 percent. According to the leasing agent, 40 percent of the current occupants are in medical or health related industries reflecting a transition from defense oriented contractors. Other health services activity is evidenced by Mariner Health Group=s purchase of Mariner Square, a Class A, 100,000 SF downtown building. In addition, Lawrence and Memorial Hospital completed a major renovation.

Gross rents for office properties generally range from $8 to $16/SF, and expenses range from $3 to $7/SF, suggesting net rents between $5/SF and $9/SF. This rent range is well below the level to support speculative office construction. Sales of Class A office properties are within $25/SF to $40/SF range, significantly lower than replacement cost without consideration for underlying land values. The supply of underperforming Class A properties in New London is limited at the present time, given the recent sale of 194 Howard Street. This 50,000 SF, Class A building reportedly sold for $1.3 million, indicating a value of $26/SF. Pfizer recently negotiated a 3 to 5 year lease and will be moving in by the end of the year. Upgrades and renovations to the building are underway, although the exact costs are unknown at this time.

b. Industrial Buildings

The region=s industrial base is reported to have more than 11 million SF, with the Groton-New London and Norwich markets each containing approximately one-third of the supply, with the remainder distributed throughout the County. The regional industrial base is reported to be dominated by owner-occupants, which account for an estimated 90% of the supply.

At the present time, the regional market has more that 30 industrial buildings available, containing in excess of 1.6 million SF. Approximately 250,000 SF (15%) are in the City of New London. However, much of the available space is not considered to be marketable, in terms of what current users require. Nearly 40% of the floor space is contained in aged, mill facilities, such as two complexes in Jewett City (440,000 SF) and five properties in New London (115,900 SF). These facilities typically do not meet current standards for ceiling heights, accessibility, etc. In contrast, only 20 percent (325,000 SF) of the regional industrial supply is considered to be modern industrial space (post-1980 construction). There is only one building available in New London which is considered to be modern industrial space, a 15,000 square foot facility.

In the City of New London, nearly 250,000 SF of industrial buildings are available. Of the industrial space in the City, nearly 50% is contained in older multi-level mill type buildings, while a very small percentage (6%) is post-1980 construction. Most of the available industrial buildings are located in the State Pier neighborhood, including the former U.S. Navy Research & Development Annex and an older manufacturing building at the Thames Valley Steel (TVS) property adjacent to State Pier. Activity at TVS, which is a 150,000 SF facility, over the last few years includes the occupancy of Pequot River Shipworks. This company, financed by the Mashantucket Pequots, has a licensing agreement with a London-based company to manufacture high tech, high speed ferry boats, which have been successfully used in Hong Kong.

The for-sale pricing of industrial buildings remains well below replacement costs, and generally ranges between $5 and $40/SF, depending on age, size, location, etc. Rental pricing ranges from $2.50/SF to $6/SF, with the low end reflective of older properties with limited finish and amenities, and the high end reflective of more modern Aflex@ space with a high percentage of finish (or built-to-suit). Mill space ranges from $1/SF to $2.50/SF. Location, size, age and amenities all influence value.

In the City of New London there is a limited supply of modern larger buildings (50,000 to 100,000 SF) with convenient access to I-95. The proposed 150,000 square foot warehouse in the State Pier MDP area would represent an expansion in the market of a product that is currently in demand. According to regional real estate brokers, the warehouse and distribution market has seen strong growth over the past two years, particularly for modern facilities in close proximity to I-95. Employment projections for the region, as presented in Table 5 earlier in this report, anticipate the creation of more than 230 new jobs in wholesale trade. The City of New London would be in a position to capture a large percentage of these new jobs with the redevelopment of the State Pier property.

c. Retail/Commercial Services

Large scale retail development has expanded over the last few years, especially in the area around the Crystal Mall in Waterford. It is reported that roughly 400,000 SF of retail buildings were permitted in 1994-1995 in the Route 85, I-95 and I-395 area, where new stores for BJ Wholesale Club, Home Depot and WalMart, to name a few, have been constructed. WalMart has also constructed stores in Groton and Norwich, during this time. Presently, the New London Mall, off I-95, is undergoing major renovations and expansion, in order to reposition itself among other regional malls.

The region has more than 265,600 SF of retail/commercial space available to the market and nearly 54 percent (143,000 SF) of this space is located in the City of New London. In addition, nearly 52 percent (66,900 SF) of the supply in the City is ground floor space in the downtown area. This suggests that the magnitude of the retail vacancy is sizable and any proposed retail development in the State Pier MDP Area may compete with potential downtown users, unless geared for alternative uses such neighborhood oriented retail and/or commercial services. Alternatively, ground floor space in the downtown could be recycled for alternative uses such as commercial services.

d. Conclusions – Office and Industrial

The City of New London has 763,800 SF of available non-commercial building area, which represents nearly 31 percent of the regional supply. The supply of available Class A office space is limited to only 46,000 SF. This equates to a citywide occupancy of more than 90 percent for Class A office. However, some, if not most, of the remaining available supply in the City of New London appears inadequate, in its current condition, to meet high quality standards and needs of potential new users without investment, which in some cases appears significant. This suggest that in the future the City should be become more focused about preservation, and consider selective demolition in order to create open space and/or alternative use sites over the long term.

The industrial market is in a similar state, with a shortage of newer, more modern high quality facilities, and an excess of older, lower quality facilities. Approximately 40% of the available industrial properties are older, mill-type properties, with limited marketability. In contrast, there is reportedly only one 15,000 SF modern industrial facility available.

VI. Development Implications

The potential effects of the employment and population forecasts, discussed earlier, have had positive impacts on the real estate market in the City of New London in terms of additional occupancy and/or new construction. This section calculates potential demand indicators resulting from employment and population growth, and analyzes potential real estate needs for the year 2010 based on the forecasts discussed earlier.

A. Non-Residential Building Demands - City of New London

In terms of non-residential buildings, the forecasted employment growth, as shown in Table 9, on the conservative side, should create a need for approximately 1.2 million SF in the City of New London over the next ten to fifteen years. On the aggressive side, the forecasted employment may create a need for approximately 1.9 million SF of non-residential building area.

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Table 9
City of New London: Estimated Employment Gains and Building Needs by 2010

Industry Sector	Employment Gains [1]	Building Type	ULI Emp. Factors [5]		Indicated Building Area	
			Low (SF)	High (SF)	Low (SF)	High (SF)
Pfizer-New London	2,000	Clinical [2]	250	250	500,000	500,000
Construction	45	Industrial	400	750	18,000	33,750
Non-durable MFG	11	Industrial	750	1,000	8,250	11,000
Wholesale Trade	28	Ind./WHS	1,000	1,500	27,921	41,881
TCPU [3]	104	Ind./Office	400	750	41,584	77,970
FIRE [4]	55	Office	250	500	13,871	27,742
Retail Trade	365	Comm/Ret.	450	650	164,256	237,259
Services	1,867	Off./Comm.	250	500	466,691	933,382
Government	29	Office	250	500	7,301	14,602
Total	4,459				1,247,875	1,877,587

[1] By 2007, extrapolated from planned figures (Pfizer) and forecasted rates (Connecticut DOL)
[2] Pfizer plans to build a 500,000 SF facility and employ 2,000 persons
[3] Transportation, Communication and Public Utilities
[4] Finance, Insurance and Real Estate
[5] Urban Land Institute Employment Factors in determining building needs
Prepared by RKG Associates, Inc.

It is important to recognize, however, that these estimates are based on the City of New London attaining its proportional share of development activity within the region. Realistically, however, there are likely to be areas where the City exceeds these figures, and other areas where it falls short. The level of attainment will depend on the competitive position of the community, relative to alternative locations in the region. Based on the quality of the proposed facility at the State Pier, as well as the multi-modal transportation capabilities (rail, ship, truck), it is anticipated that the State Pier property will capture a high percentage of new employment opportunities in warehousing and distribution. Summarized in Table 10 are the projected demand indicators for 2010 for the City of New London in comparison to the existing supply.

B. Development Implications for the State Pier

The proposed 150,000 square foot warehouse for the State Pier property, and the ancillary outdoor storage areas, is expected to be successful, based on several factors.

- The State Pier would benefit from the removal of the enclave of residential houses, not only in terms of making the site more developable but also removing a blight problem.
- In addition, the proposed traffic improvements for the area should serve to reduce traffic confusion, and improve circulation.
- The creation of a large warehouse/distribution operation would provide a complimentary use to the existing industrial activities in the neighborhood. In addition, the availability of multi-modal transportation alternatives could help regional businesses compete more effectively.
- According to regional real estate brokers, the strongest demand for industrial properties is for modern, high bay warehouse facilities, similar to the facility proposed for the State Pier. Given

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the proximity of the property to Interstate 95, this use would seem to be a good fit for the State Pier site. Although manufacturing use would provide greater benefits in terms of employment opportunities, the manufacturing segment of the regional economy has been hard hit. Manufacturing in New London as well as Connecticut has been on the decline for the last fifty years, and the State Pier property is not likely to reverse this trend. Water-related manufacturers would be good alternatives and the Free Trade Zone designation may encourage a company looking to expand. However, the site does not provide enough land area for a large scale plant like Electric Boat or Dow Chemical.

JOB CREATION ANALYSIS
150,000 SQUARE FOOT WAREHOUSE
STATE PIER PROPERTY
NEW LONDON, CT

January, 1999

Prepared for

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A. Executive Summary

The purpose of this report is to present the results of a real estate market analysis conducted to evaluate real estate market demand for the State Pier property in New London, Connecticut. The construction of a 150,000 square foot warehouse facility, with ancillary exterior storage for break-bulk cargo operations, has been proposed at the State Pier. At the request of the New London Development Corporation (NLDC), RKG Associates initiated a market study to update the real estate analysis contained in *the Transportation and Land Use Compatibility Study for the New London State Pier*, prepared in 1997 by the Maquire Group. This report represents an update of the previous study. Current market conditions were evaluated for office and industrial uses. Also, the locational attributes of the site were evaluated as they relate to marketability of the site.

In New London County, the expansion of the gaming and tourism industries has had the most noticeable impact on the commercial and residential real estate market over the past few years. In addition, the downsizing of defense-related industries has created increased vacancies in office, industrial and commercial properties.

RKG Associates, Inc. analyzed both the New London County and the City real estate market in order to evaluate alternative real estate market options for the State Pier site. The major findings and conclusions of this analysis are summarized below.

Site Specific Findings

- The State Pier would benefit from the removal of the enclave of residential houses, not only in terms of making the site more developable but also removing a blight problem.
- In addition, the proposed traffic improvements for the area should serve to reduce traffic confusion, and improve circulation.
- The creation of a large warehouse/distribution operation would provide a complimentary use to the existing industrial activities in the neighborhood. In addition, the availability of multi-modal transportation alternatives could help regional businesses compete more effectively.
- According to regional real estate brokers, the strongest demand for industrial properties is for modern, high bay warehouse facilities, similar to the facility proposed for the State Pier. Given the proximity of the property to Interstate 95, this use would seem to be a good fit for the State Pier site. Although manufacturing use would provide greater benefits in terms of employment opportunities, the manufacturing segment of the regional economy has been hard hit. Manufacturing in New London as well as Connecticut has been on the decline for the last fifty years, and the State Pier property is not likely to reverse this trend. Water-related manufacturers would be good alternatives and the Free Trade Zone designation may encourage a company looking to expand. However, the site does not provide enough land area for a large scale plant like Electric Boat or Dow Chemical.

Findings Related to the City and Region

- Since 1980, New London County's employment base has been transformed from a defense-related manufacturing base to more of a service and tourism oriented economy.
- The New London County real estate market, similar to its economic base, has been in transition and is beginning to show signs of recovery. Real estate values, in general, have been steadily increasing over the past several years. However, values remain below levels experienced in the mid to late 1980s in many markets. In addition, the recession of the early 1990s has left a number of buildings trading well below their replacement costs.
- The real estate market in New London County is primarily dominated by end-users. This is evidenced by the large and diverse facilities owned by the major employers located throughout the region.

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- According to regional real estate brokers, the strongest demand for industrial properties is for modern, high bay warehouse facilities, similar to the facility proposed for the State Pier. Given the proximity of the property to Interstate 95, this use would seem to be a good fit for the State Pier site. Although manufacturing use would provide greater benefits in terms of employment opportunities, the manufacturing segment of the regional economy has been hard hit. Manufacturing in New London as well as Connecticut has been on the decline for the last fifty years, and the State Pier property is not likely to reverse this trend. Water-related manufacturers would be good alternatives and the Free Trade Zone designation may encourage a company looking to expand. However, the site does not provide enough land area for a large scale plant like Electric Boat or Dow Chemical.

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- The real estate market in New London County is primarily dominated by end-users. This is evidenced by the large and diverse facilities owned by the major employers located throughout the region.

- The larger region has an adequate supply of commercial and industrial land for long term expansion. However, the supply of commercial and industrial land in the City of New London is limited. Development of the State Pier property for warehouse operations will help to meet the needs of this segment of the market, which has performed well over the past two years, and capitalize on the proximity of the site to Interstate 95.

- A supply of 2.5 million SF of non-residential buildings is available in the New London County market. Approximately 31 percent of non-residential buildings are located within the City of New London, with the remaining 69 percent scattered primarily between Norwich, Jewett City, Groton, and Waterford. Although a majority of this supply (65%) is industrial, only a small percentage (7%) is in the City of New London.

- A large percentage of the regional supply of industrial buildings (40%) is older mill-type complexes. In contrast, only 20% of the region's available industrial properties is considered to be "modern" (post-1980 construction). At this time there is only one available post-1980 industrial building (15,000 SF) in the City of New London. This suggests that there is a limited supply of quality industrial space for potential users, and that development of a modern warehouse industrial facility at the State Pier site could be supported.

- Twenty-four percent (598,200 SF) of the total regional supply of non-residential buildings are office properties of which 62 percent (371,400 SF) are within the City of New London. This includes approximately 190,000 SF at the former Naval Undersea Warfare Center (NUWC) site, which is expected to be demolished, according to the Municipal Development Plan for Fort Trumbull. At the present time, there is a limited supply of available Class A office space (46,000 SF) in the City of New London. Most of the other available office properties (97,100 SF) are Class B and C buildings in the downtown area.

- Retail/commercial service buildings constitute the remaining 11% (265,615 SF) of the available regional building supply. Nearly 54 percent (143,000 SF) of this space is located in the City of New London, and a majority of this supply is ground floor space in the downtown area, suggesting a sizable inventory. Recently, the New London Development Corporation initiated a Downtown Master Plan that will develop a long term strategy and implementation plan for revitalizing this section of the City.

- Real estate conditions in the City of New London have shown signs of recovery as evidenced by 90% occupancy level at selected Class A office buildings. However, occupancy at the older Class B and C buildings is lagging behind. Although rents at Class A properties have stabilized, they remain below the level needed to support new speculative construction. In addition, the historic sales values of Class A office space, created by past imbalances in the market, have not recovered sufficiently to justify new construction except for an end-user.

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150,000 SQUARE FOOT WAREHOUSE
STATE PIER PROPERTY
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Revised and Reissued
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JOB CREATION ANALYSIS FOR THE NEW LONDON STATE PIER

10.1. Executive Summary

A range of job creation estimates has been created for the development of a 150,000 square foot warehouse facility, with outdoor storage and inter-modal capabilities. Two distinct methods have been used to estimate the direct and indirect employment for the proposed State Pier facility. The Urban Land Institute methodology results in a total of 202 to 302 jobs, while the methodology employed in the 1997 Maguire study results in estiamtes of between 150 and 250 total jobs, depending on the level of cargo activity. The estimates for total job creation are summarized below.

Table 1
Estimated Indirect Job Creation
At Various Levels of Cargo Tonnage

Annual Cargo Tonnage	ULI Method	300,000	400,000	500,000
Direct Jobs	100 – 150	97	129	161
Indirect Jobs	102 – 152	53	71	89
Total Direct & Indirect	202 – 302	150	200	250
Construction Jobs (Person Years)	176	176	176	176

10.1.1 Methodology and Assumptions

The purpose of this report is to update the economic analysis contained in the 1997 *Transportation and Land Use Compatibility Study for the New London State Pier*, prepared by the Maguire Group. At the present time, there are plans to construct a large warehouse and outdoor storage facility on the State Pier property, which would be used for multi-modal transportation and distribution of cargo to and from the State Pier.

RKG Associates has utilized available published information to estimate the projected job creation impacts of the construction of a 150,000 square foot warehouse and distribution facility at the State Pier property. According to the New London Development Corporation, the facility is expected to handle an estimated 400,000 tons of cargo annually. In order to create a range of anticipated employment at the site, the 400,000 ton figure was used as the midpoint of a range of cargo activity at the site.

Job creation for a range of 300,000 to 500,000 tons annually is calculated, using generally accepted data from previous studies, the Urban Land Institute (ULI) and the U.S. Department of Commerce. ULI publishes studies regarding the average square footage per employee for numerous industries, including warehousing. These estimates are used as a check against estimates of direct job creation created using industry standards for cargo port operations, as defined in the 1997 Maguire study and the prior 1994 study prepared by Martin O'Connell Associates.

The consultants also used information from the U.S. Department of Commerce's Regional Input-Output Modeling System (RIMS II) to determine spin-off impacts associated with the creation of

new employment opportunities at the State Pier. RIMS II has state-specific multipliers which provide an indication of the indirect or induced job creation from new employment opportunities, resulting from the re-spending of wages and the purchases of goods and services by businesses.

Finally, information on construction wages in the State of Connecticut was utilized to estimate employment impacts associated with the construction of the new 150,000 square foot warehouse at the State Pier site. An estimated construction budget of $15 million was used, which accounts for the construction of the facility, as well as additional site development costs for pile-supported construction, heavy-load flooring and development of exterior storage capabilities.

10.1.2 Direct Job Creation

In order to estimate the potential for creation of direct jobs at the new facility, two methods were utilized. The first method is based on average square footage requirements per employee, as developed by ULI. ULI has historically tracked these figures, to provide communities and developers with an understanding of the magnitude of development and its impacts. According to ULI, an average warehouse operation requires 1,000 to 1,500 square feet per employee. Based on the proposed 150,000 size of the State Pier facility, 100 to 150 direct jobs would be created. This figure is considered to be somewhat low, since it does not account for the amount of exterior storage, and the interaction of the warehouse with other facilities, specifically the State Pier, the rail line and the trucking industry. Nevertheless, this can be considered the low end of our estimate for direct job creation.

As a contrast, the 1997 Maguire study was reviewed. The Maguire study estimated that for every 2,000 tons of cargo moving through the facility, one permanent full-time equivalent (FTE) position is created. Of these FTE's, 64.4% are direct jobs, and the remaining 35.6% are indirect or induced. The direct positions include stevedores, truckers, administrative staff and other affiliated personnel. Based on the potential range of cargo volumes to be handled at the facility, full-time equivalent positions would be as follows.

Table 2
Estimated FTE's at Various Cargo Tonnage

Annual Cargo Tonnage	**300,000**	**400,000**	**500,000**
Full Time Equivalent Jobs	97	129	161

Source: Transportation and Land Use Compatibility Study, New London State Pier, 1997

As shown in the Table above, it is estimated that 97 to 161 direct jobs will be created as a result of the creation of a new 150,000 square foot warehouse handling 300,000 to 500,000 tons of cargo annually. These numbers are similar to those estimated using ULI's figures. However, these figures recognize the unique nature of the State Pier operation, and recognize that additional throughput at the State Pier is likely to create additional employment opportunities.

The 1994 New London Port Development Study also estimated the types of direct jobs that would likely result from the operations of the State Pier. Almost two-thirds of the anticipated jobs generated through port operations are expected to be motor carriers. Longshoremen are

projected to account for approximately 18%, with terminal employees accounting for an additional 12.5% of employees. These three categories represent 95% of the projected employment opportunities associated with the State Pier. The remaining 5% of positions include pilots, towing companies and government employees.

Table 3
Distribution of Direct Employment
At Various Tonnage Levels
New London State Pier

	% of Employment	Cargo Volume (Tons) 300,000	400,000	500,000
Total Direct Employment	100.0%	97	129	161
Motor Carriers	64.8%	62.9	83.6	104.3
Terminal Employees	12.5%	12.1	16.1	20.1
Longshoremen	17.2%	16.7	22.2	27.7
Towing Companies	1.7%	1.6	2.2	2.7
Pilots	0.2%	0.2	0.3	0.3
Government	3.6%	3.5	4.6	5.8

Source: New London Port Development Study, RKG Associates, Inc.

10.1.3 Indirect Job Creation

There are two methods for estimating the indirect, or induced, job creation which will result from this project. Indirect job creation occurs when employees at the new facility use their income to purchase goods and services in the community, including food, shelter, transportation, etc. The U.S. Department of Commerce's RIMS II model calculates indirect job creation for specific industries. In addition, RIMS II has state-specific multipliers in each major industry group. According to RIMS II, each direct warehouse job creates an additional 1.016 jobs elsewhere in the economy. Using this multiplier, and our low-end estimates for job creation, yields the following estimates for indirect job creation.

Table 4
Estimated Indirect Job Creation

	Low Estimate	High Estimate
Direct Jobs	100	150
Multiplier	1.016	1.016
Indirect Jobs	102	152

Source: U.S. Department of Commerce

Once again, the reader is reminded that this methodology does not consider the interaction of the facility with the State Pier, the amount of exterior storage space or the level of cargo activity at the facility. As an alternative, the methodology employed in the 1997 Maguire Group study can be used. The Maguire study estimated that for every 2,000 tons of cargo, 0.36 indirect jobs are created. Using this methodology, the following estimates are derived.

Table 5 Estimated Indirect Job Creation At Various Levels of Cargo Tonnage			
Annual Cargo Tonnage	**300,000**	**400,000**	**500,000**
Indirect Jobs	53	71	89
Source: Transportation and Land Use Compatibility Study, New London State Pier, 1997			

These estimates are lower than those estimated by the ULI methodology. This is due to the different approach to estimating total job impacts. However, this methodology is considered more appropriate, given that it has been developed specifically for the port industry.

10.1.4 Construction Jobs

The construction of a new $15 million warehouse facility will have additional job creation impacts. Typically, a new construction project of this type includes direct wages which equate to approximately 45% of the total project cost. This means that $6.75 million in construction wages would be paid during the course of this project. Using the average construction wage of $38,388 for the region, as provided by the Connecticut Department of Labor, 176 person-years of construction employment would be created by the construction of a 150,000 square foot warehouse facility on the State Pier site.

10.1.5 Summary

A range of job creation estimates has been created for the development of a 150,000 square foot warehouse facility, with outdoor storage and inter-modal capabilities. The range of job creation estimates developed using the ULI methodology is shown in the Table below.

Table 6 ULI Estimates for Job Creation State Pier Warehouse Project		
	More Conservative	**Less Conservative**
Direct Jobs	100	150
Indirect Jobs	102	152
Total Direct & Indirect	202	302
Construction Jobs (Person Years)	176	176

Using the methodology employed in the 1997 Maguire report yields higher estimates for the number of jobs to be created at the site. These estimates are more closely tied to the type of facility planned at the State Pier, and are more comprehensive in tying the level of job creation at the site to the level of cargo activity. This methodology also accounts for exterior storage at the site, as well as the interaction of the facility with the State Pier and other transportation service providers. The estimates for total job creation are summarized below.

Table 5

Estimated Indirect Job Creation

At Various Levels of Cargo Tonnage

Annual Cargo Tonnage	300,000	400,000	500,000
Indirect Jobs	53	71	89

Source: Economics and Land Use Compatibility Study, Port Jackson State Pier, 1997

These estimates are lower than those estimated by the ULI methodology. This is due to the different approach to estimating total job impacts. However, this methodology is considered more appropriate, given that it has been developed specifically for the port industry.

10.1.4 Construction Jobs

The construction of a new $15 million warehouse facility will have additional job creation impacts. Typically, a new construction project of this type includes direct wages which equate to approximately 35% of the total project cost. This means that $5.25 million in construction wages would be paid during the course of this project. Using the average construction wage of $38,388 for the region, as provided by the Connecticut Department of Labor, 176 person-years of construction employment would be created by the construction of a 150,000 square foot warehouse facility on the State Pier site.

10.1.5 Summary

A range of job creation estimates has been created for the development of a 150,000 square foot warehouse facility, with outdoor storage and inter-modal capabilities. The range of job creation estimates developed using the ULI methodology is shown in the Table below.

Table 6

ULI Estimates for Job Creation

State Pier Warehouse Project

	More Conservative	Less Conservative
Direct Jobs	100	150
Indirect Jobs	102	152
Total Direct & Indirect	202	302
Construction Jobs (person years)	176	176

Using the methodology employed in the 1997 Maguire report yields higher estimates for the number of jobs to be created at the site. These estimates are more closely tied to the type of facility planned at the State Pier, and are more comprehensive in tying the level of job creation at the site to the level of cargo activity. This methodology also accounts for exterior storage at the site, as well as the interaction of the facility with the State Pier and other transportation service providers. The estimates for total job creation are summarized below.

Table 7 Estimated Indirect Job Creation At Various Levels of Cargo Tonnage			
Annual Cargo Tonnage	**300,000**	**400,000**	**500,000**
Direct Jobs	97	129	161
Indirect Jobs	53	71	89
Total Direct & Indirect	150	200	250
Construction Jobs (Person Years)	176	176	176

As shown in Table 7 above, the estimated total number of direct and indirect jobs created ranges from 150 to 250. This is similar to the job creation estimates developed using the ULI methodology, which ranged from 202 to 302. However, the consultants recommend that the NLDC rely upon the job creation estimates which are tied to the level of cargo activity at the State Pier.

RELOCATION PLAN

FOR THE

STATE PIER MUNICIPAL DEVELOPMENT PROJECT

NEW LONDON DEVELOPMENT CORPORATION
NEW LONDON, CONNECTICUT

DECEMBER 1998

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RELOCATION PLAN

Introduction

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The entire relocation process will be accomplished by the New London Development Corporation with assistance from others as appropriate. The relocation of site occupants will comply with the Uniform Relocation Assistance Act (Chapter 135 Connecticut General Statutes), this relocation plan and local procedures.

This plan is divided into six sections as follows:

I. Identification of Business/Non-Profit Agencies
II. Non-Residential Relocation Assistance Advisory Plan
III. Anticipated Non-Residential Relocation Expenses
IV. Identification of Housing Units
V. Residential Relocation Assistance Advisory Plan
VI. Anticipated Residential Relocation Expenses

Section I. Identification of Businesses/Non-Profit Agencies

The planning process for creation of the Municipal Development Plan for the State Pier Area, specifically for the initial Action Area, identified no operating businesses or non-profit agencies. No non-residential relocation is required at this time. However, should changes in the Action Area or future Action Areas require non-residential properties to be acquired, their location, relative to project boundaries, will be shown on an Acquisition Map.

There are three (3) non-residential usage parcels in the initial Action Area. Two (2) parcels are vacant (one (1) state-owned and one (1) privately-owned) and one (1) parcel contains a vacant residential building that had been converted to a laundromat.

Although not applicable for the initial Action Area, if occupied non-residential properties are proposed for acquisition as part of future actions, upon approval of the Municipal

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Although not applicable for the initial Action Area, if occupied non-residential properties are proposed for acquisition as part of future actions, upon approval of the Municipal

Development Plan by the City of New London and the initiation of the project, NLDC staff and/or its designees will meet with each business owner(s) or designated representative scheduled to be displaced to conduct a basic survey. The purpose of the survey will be to document the characteristics, (i.e., services or products sold, space occupied)of each business and ultimately determine specifications for a new site. Based upon this information, alternative commercial sites will be identified for such businesses/non-profit agencies. At that time, the local commercial real estate market will be surveyed to determine if a sufficient vacancy rate and turn-over rate exists that will satisfy the requirements of potential non-residential displacees from the Project Area. Project relocation staff and/or its designees will follow the Non-Residential Assistance Advisory Plan as described herein.

Section II. Non-Residential Relocation Assistance Advisory Plan

A. Surveys to Determine Relocation Needs

Planning Surveys

Information will be gathered from secondary sources by New London Development Corporation (NLDC) staff and/or its designees on all business and non-profit concerns located in buildings proposed for acquisition at the earliest possible time. These surveys are designed to determine the characteristics of each concern which relate to its possible relocation. These characteristics include business type, space occupied, building characteristics, number of employees, etc. The data to be compiled will be documented on a Site Occupant Record.

Additional Surveys

Interviews will be conducted of all occupants of properties to be acquired at the time of the beginning of property acquisition activity in that phase of the project. These interviews will bring the information gathered in the original surveys up to date, and will be more detailed in regard to the specific situation and relocation factors of each concern to be relocated. Interviews for properties currently under option or contract will be conducted upon a decision to acquire those properties and notification to property owners.

B. Information Program and Relocation Office

An informational letter for non-residential occupants will be delivered to all non-residential site occupants by the NLDC at the time of approval of a purchase contract or at the time of exercise of an option with the property owner. This letter will include at least the following elements:

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1. A complete description of the nature and types of activities which will be undertaken;

2. an indication of the availability of relocation payments, including the types of payments, the general eligibility criteria for non-residential occupants, and a precaution that premature moves might make concerns ineligible for benefits;

3. a statement that no concern lawfully occupying property will be required to move without at least ninety (90) days written notice;

4. a map, with clear explanation, showing the boundaries of the project area;

5. a statement of the purpose of the non-residential relocation program with a brief summary of the sources and aids available, including a statement that the NLDC will provide assistance in locating non-residential relocation sites;

6. encouragement to site occupants to visit the NLDC offices, to cooperate with the staff, to seek their own relocation accommodations, and to notify the NLDC prior to their move;

7. a statement that the NLDC will provide assistance to concerns in obtaining locations of their choice, including assistance in the referral of their complaints of discrimination to the State Human Rights Commission;

8. a summary of the NLDC eviction policy; and

9. the address, telephone numbers and hours of the NLDC Office.

C. Services to be Provided to Non-Residential Concerns

Consultations

Representatives of the NLDC will periodically visit or call non-residential concerns being displaced in order to consult with them regarding their relocation. These consultations will keep up to date the information gathered in earlier surveys or consultations, and will enable the NLDC and these concerns to exchange information on new non-residential listings, listings found to be unsuitable by the concern and other opportunities or problems involved.

Current Information on Relocation Sites and Referrals

Gathering Information on Relocation Sites - the NLDC will be responsible for assembling data relating to relocation sites for non-residential concerns.

1. General Data

The NLDC will continuously collect current information on the availability, costs and floor size of comparable relocation sites. It will do this through

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2. Economic Information

Whenever and as often as it is deemed necessary and feasible, by NLDC, studies will be conducted and data compiled relating to the various economic and growth potential factors of non-residential vacancies and building sites. The study will include such elements as property values, growth potentials, zoning ordinances, and other general and economic information concerning individual sites and/or areas within the City of New London and the surrounding area.

Listings and Referrals

Listings

The NLDC will maintain an up-to-date file of known and potential non-residential vacancies and sites for referral to relocating concerns. These listings will include available information concerning each potential location and the results of whatever economic studies may have been conducted. To the greatest extent possible the regions commercial brokerage industry will be utilized to locate and place relocating businesses in new sites.

Referrals

Relocating concerns will be notified of available locations which are comparable and suitable by providing them, in person or by mail, with copies of the relevant listing sheets. The NLDC will also assist, through consultation with the relocation concern, in other considerations or discussions of sites. In the course of these referrals and consultations, the NLDC will avoid involvement in or interference with the relocating concern's daily operation or its decisions.

D. Procedures for Making Relocation Payments

Eligibility

Relocation payments will be made to all eligible project or program area occupants under the provisions of the Uniform Relocation Assistance Act (Chapter 135 Connecticut General Statutes) in accordance with the policies, procedures and requirements contained herein.

Notification to Persons in Area

The NLDC will notify, in person or by mail at the earliest possible time after a purchase and sale agreement is executed or an option exercised, all non-residential concerns who may be displaced by project or program activities of the

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availability of relocation payments, the office where detailed information about the program may be obtained and the dates governing eligibility for the payments.

Assistance in Making Claims

Upon request of a claimant, the NLDC will provide assistance in the preparation of claims for relocation payments. Claim forms will be provided.

Time Limit for Submission of Claims

Claims for relocation payments must be submitted by the business concern with twelve (12) months of the date of claimant's displacement.

E. Review and Appeals

Determining Eligibility

The NLDC will be responsible for determining the eligibility of a claim for, and the amount of, payment in accordance with State regulations and relocation procedures. Once the final determination is made, adjustments may be made as a result of the grievance procedures or if the NLDC is directed by the State government or a court, to make an adjustment as a result of a review of a claimant's grievance.

Appeals

The NLDC will promptly review all written appeals in accordance with applicable law, regulations and policies. It will consider a written appeal regardless of form.

A person may file an appeal in any case in which the person believes that NLDC has failed to:

(1) Properly determine that the person qualifies for relocation assistance;
(2) Properly determine the amount of any relocation payment;
(3) Waive the time limit for (a) the filing of a claim or an appeal or (b) purchasing, renting or occupying a replacement unit; or
(4) Other relocation issues.

Refer to the Grievance Procedure contained in Appendix B for a explanation of the process of appeal. Appendix B is in the form of a notice to be provided to all occupants to be displaced.

F. Prior HUD Approval

Unless Federal funds are utilized, prior HUD approval is not applicable. If Federal funds are utilized, HUD approval will be sought as applicable.

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G. Payment of Claims

All non-residential relocation payments will be made to eligible claimants in accordance with the regulations, guidelines and procedures promulgated by State Law and NLDC procedures.

Eligible businesses may choose to claim either reimbursement for actual moving and related expenses and real property loss or a fixed payment in lieu of moving expenses. The fixed payment will not exceed $10,000 as stipulated by Section 8-268(c) of the Connecticut General Statutes.

Timing of Payment

A payment will be made by the NLDC as promptly as possible after a claimant's eligibility has been determined and a claim filed. Advance payments may be made in hardship cases if the NLDC determines such advances to be appropriate (e.g., the claimant needs money for security deposit on a replacement site).

Set-Off Against Claim

In instances where otherwise eligible claimants have unpaid financial obligations to the NLDC, the NLDC may set off these obligations against the claimant's relocation payments.

H. Procedures to Avoid Duplicate Payments

Any person who receives a relocation payment as part of an eminent domain award, under State Laws governing same, shall not receive a duplicate relocation payment of which he/she may be entitled to under these guidelines. However, the NLDC may make a relocation payment for any difference between the relocation payment prescribed by the court and the amount entitled to such person under these guidelines.

I. Payments Not to be Considered as Income

Federal and State regulations provide that relocation payments are not to be considered as income for Federal Income Tax purposes or for determining eligibility or extent of eligibility of a person under the Social Security Act or any other Federal Law.

J. Termination of Active Relocation Assistance

The NLDC will provide assistance to non-residential concerns until permanent relocation has been successfully achieved and all relocation payments have been made. In general, the only circumstances under which the NLDC's relocation effort ceases are the following:

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1. The business concern or non-profit organization has received all assistance and payment to which it is entitled and has either been successfully relocated or ceased operations;

2. The site occupant refuses to accept one or a reasonable number of offers of accommodations meeting the relocation standards. (In the case of continuous refusal to admit a relocation interviewer who attempts to provide assistance, visits the site occupant at reasonably convenient times and has, whenever possible, given notice of his intention to visit the site occupant, the NLDC and its staff shall write, telephone or take other reasonable steps to communicate with the site occupant before terminating active assistance).

K. Eviction Policy

Site occupants will be evicted only as a last resort. Eviction in no way effects the eligibility of non-residential concerns for relocation payments. The NLDC records will be documented to reflect the specific circumstances surrounding the eviction from NLDC acquired property. Eviction shall be undertaken only for the following reasons:

1. Serious or repeated violations of the terms and conditions of the lease or occupancy agreement; or

2. The eviction is allowed by State or local Law and cannot be avoided by the NLDC.

L. Relocation Records and Reports

The NLDC will keep up-to-date records on the relocation of all site occupants. These records shall be retained for inspection and audit for a period of three (3) years following completion of the project or program or the completion of the making of relocation payments, whichever is later.

Relocation Record

The NLDC will develop and also maintain a relocation record, beginning with the information secured during the first interview to assess the needs of the displaced occupant. The record shall contain all data relating to relocation of the displaced occupant, including the nature and dates of services that are provided, the type and amount of relocation payments made and the location to which those displaced are relocated, including a description and/or inspection certificate for the accommodation.

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Section III. Anticipated Non-Residential Relocation Expenses

There are no non-residential businesses/non-profit agencies in the initial Action Area. There are no non-residential relocation expenses at this time. If during future Action Area phases or as a result of change in the extent of acquisition non-residential entities are to be relocated then a budget determination will be established. The budget will include expenditures for eligible moving payments, fixed payments, moving personal property and, when necessary, payments for direct losses of personal property. A contingency account will also be budgeted. Funding for the relocation program is to coincide with the phasing of the acquisition of properties.

Section IV. Residential Relocation Plan - Identification of Housing Units

The Municipal Development Plan will require the relocation of a maximum of 20 residential households. Residential properties in the project study area are summarized below. All units identified are not occupied at this time. Acquisition of residential dwellings and relocation of occupants, will be undertaken in sequence with the availability of resources to accommodate displacees. Potential households to be displaced are identified as follows:

Assessors Block No.	Assessor Map	Residential Buildings	Potential Households
239	38	4*	6
240	38	7**	9
245	38	3	5
		Total	20

* 1 building converted to laundromat. Now vacant.
** 2 buildings vacant

At this time the local residential real estate market appears to have a vacancy rate and turn-over rate that is sufficient to satisfy the requirements of residential displacees from the Project Area. This conclusion is supported by the following analysis of New London's and adjoining Town's housing stock.

A. Analysis of Housing Relocation Resources

1. Overview

"Despite its relatively compact size New London offers a wide diversity of housing opportunities for its residents. The City contains a significant inventory of housing stock which varies in size and price and includes: spacious, well maintained historic mansions; single family homes; duplexes; townhouses; condominiums; apartment complexes; rooming and boarding houses; apartment hotels; group homes; and high density, high rise public housing. The City contains some of the most affordable housing in the State". Chapter 6, page 2. New London Plan of Conservation and Development.

Section III. Anticipated Non-Residential Relocation Expenses

There are no non-residential businesses/non-profit agencies in the initial Action Area. There are no non-residential relocation expenses at this time. If during future Action Area phases or as a result of change in the extent of acquisition non-residential entities are to be relocated then a budget determination will be established. The budget will include expenditures for eligible moving payments, fixed payments, moving personal property and, when necessary, payments for direct losses of personal property. A contingency account will also be budgeted. Funding for the relocation program is to coincide with the phasing of the acquisition of properties.

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245	38	3	3
		Total	20

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The table which follows is comprised of statistics available from the 1990 Census of Population and Housing. It provides summary information on the number, availability and cost of owner-occupied and rental housing units in New London and the neighboring municipalities of Groton and Waterford. As appropriate, data from the City of New London's Consolidated Plan for Housing and Community Development and Plan of Conservation and Development has also been included in this analysis.

Comparative Census Statistics
New London and Adjacent Communities

	New London	Waterford	Groton
Total Number of Housing Units	11,970	7,357	16,598
Occupied Units	10,712	6,956	14,853
Vacant Units	1,258	401	1,745
% Vacant	10.5	5.4	10.5
Owner Occupied-Units	3,954	5,878	7,048
% Owner-Occupied	36.9	84.5	47.5
Renter Occupied Units	6,758	1,078	7,805
% Renter-Occupied	63.1	15.5	52.5
Overall Vacancy Rate	10.5	5.4	10.5
Vacancy Rate for Owner-Occupied	2.3	1.5	4.6
Vacancy Rate for Renter-Occupied	10.4	5.4	7.9
Median Value	$131,600	$159,700	$148,200
Median Contract Rent	$455	$570	$547

Source: 1990 U.S. Census

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Housing Units by Tenure, Type & Bedroom Size
New London, CT

Renter-Occupied	
0 & 1 Bedroom	2,890
2 Bedroom	2,480
3 or more Bedroom	1,388
Owner-Occupied	
0 & 1 Bedroom	161
2 Bedroom	962
3 or more Bedroom	2,831
Vacant Units for Rent	
0 & 1 Bedroom	402
2 Bedroom	341
3 or more Bedroom	62
Vacant Units for Sale	
0 & 1 Bedroom	0
2 Bedroom	41
3 or more Bedroom	45
Other Vacant Units	
0 & 1 Bedroom	100
2 Bedroom	99
3 or more Bedroom	168

Source: U.S. Department of Housing and Community Development - Comprehensive Housing Affordability Strategy Databook

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2. Ownership

As evidenced by data in the previous tables, the majority of the City's residents rent housing -- 63.1% of the housing units are renter-occupied. Over the past several census periods the percent of renter-occupied housing has increased. In 1970, 58.6% of all occupied housing units were renter-occupied, increasing to 62.5% in 1980. As outlined in the City's Plan of Conservation and Development this trend of increasing number of renter-occupied units highlights the current imbalance between owner and renter housing. According to the Plan, these figures identify the "need to develop strategies and programs to allow opportunities for more residents to attain homeownership thereby improving the balance in the housing stock". Current programs and strategies to improve homeownership opportunities are discussed in a later section.

3. Home Ownership

At the time of the 1990 Census, 31.3% (3,751) of the City's housing stock was comprised of single-family units. This percentage is comparatively lower than all of the other municipalities in the New London region. Single-family homes comprised 56.5% of Groton's and 57.4% of Waterford's housing stock. Of the 3,751 single-family housing units in New London, 3,387 were single-family detached units and 364 were single-family attached (generally condominium-type units). The following table depicts the housing units by structure type statistics from 1990. The number of 2 to 4 unit structures in New London provides the opportunity to combine homeownership with rental income availability. This configuration, wherein the homeowner can offset costs with rental income from tenants in other units within the structure, is a common configuration for affordable housing programs.

	New London	Waterford	Groton
Units in Structure			
1-Unit, Detached	3,387	6,359	7,509
1-Unit, Attached	364	148	2,012
2 to 4 Units	3,897	414	2,755
5 to 9 Units	1,326	150	1,146
10 or More Units	2,797	73	2,215
Mobile Home, Trailer, Other	199	213	961
	11,970	7,357	16,598

Source: 1990 U.S. Census

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10 or More Units	2,797	73	2,215
Mobile Home, Trailer, Other	199	213	961
	11,870	7,357	16,598

Source: 1990 U.S. Census

As a means to reverse the declining trend in home ownership in the City and to ensure long-term housing affordability the City has established a program whereby deteriorating properties are purchased and rehabilitated and then sold to low- and moderate- income families. Property deeds contain resale restrictions on the price or give the right of first refusal to the City or a trust which in turn would sell it to another low-moderate income family.

In 1993, the City initiated a purchase and rehabilitation program which has resulted in the reconstruction of several homes. At the time of this report, four homes (3 single-family and 1 duplex) are currently available through the New London Neighborhood Investment Initiative Program. These homes are being sold for between $62,000 and $80,000. Homes are sold to income-qualified owners (80% of New London Area Median Income) in move-in condition. They have been renovated to meet housing and building code standards as well as local lead-safe standards.

Three additional properties are currently underway as part of the Neighborhood Investment Initiative Program. All three of these units contain at least one rental unit.

In addition to the City's Neighborhood Investment Initiative Program, which provides affordable homeownership opportunities, a special homeownership assistance program is also being offered to households being displaced by public redevelopment programs through the Connecticut Housing Finance Authority (CHFA). CHFA provides Home Buyer Mortgages, Downpayment Assistance and/or Rehabilitation Mortgage Loans to income-eligible households. A special ¼% fee reduction is available for program participants from/or in New London.

4. Rental Housing

At the time of the 1990 Census, 2,797 housing units were located in structures containing 10 or more housing units. A 1996 Inventory of Multi-Family Housing, those developments containing 10 or more units, was undertaken as part of the Plan of Conservation and Development process. The majority of the multi-family housing in the City was built during the 1960's and 1970's. Of the 3,748 units in the 1996 inventory, 1,633 (44%) were publicly-subsidized in some manner and the remaining were private-market units.

In addition to the rental opportunities in large multi-family developments described above, New London also has a significant amount of rental housing units in buildings with 2 to 4 units (3,897 units) and a lesser amount in buildings of 5 to 9 units (1,326 units).

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In 1993, the City initiated a purchase and rehabilitation program which has resulted in the reconstruction of several homes. At the time of this report, four homes (3 single-family and 1 duplex) are currently available through the New London Neighborhood Investment Initiative Program. These homes are being sold for between $82,000 and $80,000. Homes are sold to income-qualified owners (80% of New London Area Median Income) in move-in condition. They have been renovated to meet housing and building code standards as well as local lead-safe standards.

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5. Rental Housing Availability

In an attempt to quantify the availability and cost of rental housing in New London and its adjacent communities of Groton and Waterford, the Real Estate Guide published by the New London Day was reviewed for a four week period from September 11, 1998 through October 2, 1998 and reviewed on a regular basis thereafter.

According to the real estate listings, the average cost for a one bedroom apartment in New London was just over $500. One bedroom units in Groton averaged between $550 and $600. Only a limited amount of apartments were listed in Waterford. Of those listed, rents ranged between $500 - $600 for a one-bedroom. Rents for two bedroom units averaged $589 to $600 in New London and $629 to $670 in Groton. Rents for two bedroom units in Waterford ranged between $600 and $700. Based upon the sample analyzed, rents in Groton were typically $50 more per month than New London rents for similar sized units.

In an average weekly listing, between 15 and 20 one-bedroom units were listed for rent; 10 to 15 two bedroom units were listed; 5 three bedroom units were listed; and 5 studio/efficiency units were listed for rent in New London. In addition, the larger apartment complexes in the area advertised unit availability without providing unit characteristics.

The U.S. Department of Housing and Urban Development published the 40th Percentile Fair Market Rents for Existing Housing based upon survey data. The monthly fair market rents for the New London-Norwich MSA as of October 1, 1998 are $491 for an efficiency unit; $594 for a one bedroom; $723 for a two bedroom; $905 for a three bedroom; and $1,034 for a four bedroom. These rents include utilities.

6. Ownership Housing Availability

Since 1990, the City of New London has experienced very little new housing construction. In fact, over the past several years, demolition of substandard and deteriorated properties has offset any true net gains in dwelling units. Due to the lack of developable land for residential purposes in the City the majority of new housing units brought to the market have been renovated units in existing structures.

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Housing Units Authorized
New Construction

	1990	1991	1992	1993	1994	1995	1996	1997
New London	16	5	11	3	1	2	0	0
Waterford	37	42	42	58	110	89	157	79
Groton	52	46	121	59	71	40	74	82

Source: State of Connecticut Department of Economic and Community Development

Through October 1998, according to the Southeastern Connecticut Board of Realtors Multiple Listing Service and the Commercial Record, 321 residential properties were sold in New London at an average selling price of $89,900. Over the same time period, 405 homes were sold in Waterford and 527 homes were sold in Groton. Average selling prices in Waterford and Groton were slightly higher than New London's sales prices, at $117,000 and $127,000 respectively.

Recent residential sales data for New London, as provided by Commercial Record for New London, Groton, Waterford and all of New London County are shown in the following table. Over the past five years, New London averaged 275 sales per year with median sales prices in the $75,000 - $80,000 range.

Residential Sales Data
New London, Waterford, Groton and New London County
1993 - 1997

	1993	1994	1995	1996	1997
New London					
# of Sales	209	253	298	286	346
Median Sales Price	$80,000	$75,000	$80,000	$82,000	$74,000
Waterford					
# of Sales	291	320	323	365	404
Median Sales Price	$115,000	$109,900	$109,000	$112,500	$111,100
Groton					
# of Sales	380	458	489	490	531
Median Sales Price	$112,000	$107,000	$108,000	$109,000	$116,500
New London County					
# of Sales	3,438	3,951	3,935	3,983	4,494
Median Sales Price	$109,000	$109,000	$105,000	$105,000	$110,000

Source: Commercial Record

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Median Sales Price	$109,000	$105,000	$105,000	$105,000	$110,000

Source: Commercial Record

In terms of residential listings, as of September 1998, New London had 106 active listings, Waterford had 154 and Groton had 220. Average list prices for the three communities are $104,000, $168,100 and $194,000. Year-end 1998 statistics show active listings in New London at 152 -- 89 single family residential and 63 multi-family residential. A review of published real estate listings in New London showed nineteen (19) single family homes and ten (10) condominiums for sale under $70,000; twenty (20) single family homes for sale between $70,000 and $90,000 and ten (10) single family homes for sale between $90,000 and $100,000.

Once the State Pier Municipal Development Plan is approved by the governing body of the City of New London, project relocation staff will follow the Residential Relocation Assistance Advisory Plan as described herein.

Section V. Residential Relocation Assistance Advisory Plan

A. Survey to Determine Relocation Needs

1. Surveys and Consultations With Residential Occupants

A meeting with each household affected by the acquisition program will be conducted by the NLDC staff and/or a designee at the earliest possible time after approval of the MDP or an earlier decision to acquire properties currently under option or contract and initiation of that phase of the program affecting the household. These meetings will be designed to determine the tenant needs of each household that will be displaced and to record data to include the number of rooms, special needs, location preferences, etc.

2. Social Service Special Needs Assessment

If the relocation staff determines the tenant's needs surpass the amenities and services offered in traditional rental housing, a tenant needs assessment will be conducted by an appropriate public service professional/provider. The tenants needs assessment -- a more detailed survey -- will cite the specific needs of each such household/tenant. Where feasible, relocation staff will follow up on referrals by contacting the tenant and the referral agency to determine whether identified needs are being addressed.

B. Information Program and Relocation Office

An informational letter for residential occupants will be delivered to all residential site occupants by the NLDC as soon as feasible after approval of the Municipal Development Plan by the City of New London. This letter will include at least the following elements:

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1. A complete description of the nature and types of activities which will be undertaken in the project area and a map showing the project area boundaries; and

2. The notice to persons to be displaced shall:

   a) Explain that a project has been approved and caution the person not to move before the person receives a notice of eligibility for relocation assistance; and

   b) Generally describe the relocation payments for which the person may be eligible, the basic conditions of eligibility, and the procedures for obtaining the payments; and

   c) Inform the person that he or she will be given reasonable relocation advisory services, including referrals to replacement properties, help in filing payment claims, and other necessary assistance to help the person successfully relocate; and

   d) Inform the person that he or she will not be required to move without at least 90 days advance written notice and inform any person to be displaced from a dwelling that he or she will not be required to vacate the property earlier than 90 days after at least one comparable replacement dwelling has been made available; and

   e) Describe the person's right to appeal NLDC's determination concerning relocation assistance.

3. Notice of Eligibility for Relocation Assistance. This notice shall:

   a) Inform the person of his or her eligibility for the relocation assistance, effective on the date of the initiation of negotiations.

   b) Describe assistance, the estimated amount of assistance and the procedures for obtaining the assistance.

4. Ninety-Day Notice (Covers Persons to be Displaced)

   a) General - No lawful occupant to be displaced shall be required to move unless he or she has received at least 90 days advance written notice of the earliest date by which he or she may required to move.

   b) Timing of Notice - The 90-day notice shall not be given before the person is issued a notice of eligibility for relocation assistance. A person to be displaced from a dwelling shall not be issued a 90-day

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b) Timing of Notice - The 90-day notice shall not be given before the person is issued a notice of eligibility for relocation assistance. A person to be displaced from a dwelling shall not be issued a 90-day

notice before a comparable replacement dwelling is identified as available.

c) Content of Notice - The 90-day notice shall either: a) state the specific date by which the property must be vacated; or, b) specify the earliest date which the occupant may be required to move and indicate that the occupant will receive a vacate notice indicating, at least 30 days in advance, the specific data by which he or she must move.

d) Urgent Need - In unusual circumstances, an occupant may be required to vacate the property on less than 90 days advance written notice if the NLDC determines that a 90 day notice is impracticable, such as when the person's continued occupancy of the property would constitute a substantial danger to health or safety. A copy of the NLDC's determination shall be included in the applicable case file.

e) Notice Not Required - The 90 day notice need not be issued if a) there is no structure or personal property on the real property, or b) the occupant makes an informed decision to relocate and vacates the property without prior notice, or c) the occupant owns the property and enters into a negotiated agreement for delivering possession of the property (e.g., delivery of possession is specified in the purchase contract), or d) the occupant will not qualify as a displaced person.

f) Delivery of Notices - Each notice shall be sent by Certified Mail, return receipt requested. Each notice shall indicate the name and telephone number of a person who may be contacted for answers to questions or other needed help.

C. Replacement Housing Assistance

1. Written Notice of Comparable Replacement Dwelling - No tenant to be displaced shall be issued a 90 day notice until such tenant has been given a written notice of the availability of three "comparable replacement" dwellings.

2. Definition of Comparable Replacement.

a) Decent, safe and sanitary.

b) Functionally equivalent to the displacement dwelling. The term "functionally equivalent" means that it performs the same function, provides the same utility, and is capable of contributing to a comparable style of living. While a comparable replacement dwelling need not

notice before a comparable replacement dwelling is identified as available.

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possess every feature of the displacement dwelling, the principal features must be present. Generally, functional equivalency is an objective standard reflecting the range of purposes for which the various physical features of a dwelling may be used. However, when determining whether a replacement dwelling is functionally equivalent to the displacement dwelling, the NLDC may consider reasonable trade-offs for specific features when the replacement unit is "equal to or better than" the displacement dwelling.

c) Examples of Trade-Offs: If the displacement dwelling contains a pantry and a similar dwelling with pantry is not available, a replacement dwelling with ample cupboards may be acceptable. Insulated and heated space in a garage might prove an adequate substitute for basement workshop space. A dining area may substitute for a separate dining room. Under some circumstances, attic space could substitute for basement space for storage purposes, and vice versa. Generally, a comparable replacement dwelling must contain approximately the same amount of space as the displacement dwelling. However, when the displacement dwelling is dilapidated, a smaller "decent, safe and sanitary" replacement dwelling (which by definition is "adequate to accommodate the displaced person") may be determined to be functionally equivalent to the displacement dwelling.

d) In an area not subject to unreasonable adverse environmental conditions from either natural or human sources.

e) Currently available to the displaced person. A dwelling is considered "available" if the person is informed of the location of the dwelling; has sufficient time to negotiate and enter into a purchase agreement or lease for the dwelling; and, subject to reasonable safeguards, is assured of receiving the relocation assistance in sufficient time to complete the purchase or lease.

f) If the person does not receive a government housing subsidy before displacement, the comparable replacement dwelling must be available on the private market and not require a government housing subsidy.

g) A comparable replacement dwelling for a person receiving government housing assistance before displacement may reflect similar government housing assistance, such as:

A privately owned dwelling with a project-based housing subsidy (i.e., subsidy tied to the unit) may qualify as a comparable replacement dwelling only for a person displaced from a similarly

possess every feature of the displacement dwelling, the principal features must be present. Generally, functional equivalency is an objective standard reflecting the range of purposes for which the various physical features of a dwelling may be used. However, when determining whether a replacement dwelling is functionally equivalent to the displacement dwelling, the MLDC may consider reasonable trade-offs for specific features when the replacement unit is "equal to or better than" the displacement dwelling.

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- A privately owned dwelling with a project-based housing subsidy (i.e., subsidy tied to the unit) may qualify as a comparable replacement dwelling only for a person displaced from a similarly

subsidized unit or government-owned public housing unit.

A privately owned dwelling made affordable by a housing program subsidy to a person (i.e., subsidy not tied to the building), such as Section 8 Existing Housing Program Certificate or Housing Voucher, may qualify as a comparable replacement dwelling for a person receiving a similar subsidy before displacement from a unit with a project-based subsidy.

D. Replacement Housing Referrals

Gathering information on replacement housing will be the responsibility of the NLDC.

1. The NLDC will continuously collect current information on the availability of rental units, rental costs and room size of comparable relocation sites. It will do this through a systematic review of all advertised vacancies; direct appeals through agents, brokers and the news media for vacancy listings. To the greatest extent possible, the regions residential brokerage industry will be utilized to locate and secure new dwelling units for households to be displaced from the project.

2. Housing Information and Listings
Whenever and as often as it is deemed necessary and feasible by the NLDC, studies will be conducted and data compiled relating to the current residential rental costs such as a newspaper rent survey.

3. Referrals
Relocating households will be notified of available locations which are comparable and suitable by providing them, in person or by mail, with copies of the relevant listing sheets. The NLDC will also assist, through consultation with the relocating household, in other considerations or discussion of sites. In the course of these referrals and consultations, the NLDC will avoid involvement in or interference with the relocating household's daily operation or its decisions.

E. Procedures for Making Relocation Payments

Eligibility
Relocation payments will be made to all eligible project or program area occupants under the provisions of the Uniform Relocation Assistance Act (Chapter 135 of the Connecticut General Statutes) in accordance with policies, procedures and requirements contained herein.

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Relocation payments will be made to all eligible project or program area occupants under the provisions of the Uniform Relocation Assistance Act (Chapter 135 of the Connecticut General Statutes) in accordance with policies, procedures and requirements contained herein.

Notification to Persons to be Displaced

The NLDC will notify, in person or by mail at the earliest possible time, all residential tenants who will be displaced by the project. Relocation payment eligibility and the office where detailed information about the project may be obtained will also be described in the notice to tenants.

Assistance in Making Claims

Upon request of a claimant, the NLDC will provide assistance in the preparation of claims for relocation payments. Claim forms will be provided.

Time Limit for Submission of Claims

Claims for relocation payments must be submitted by the tenant/head of household within twelve (12) months of the date of the claimant's displacement.

F. Review and Appeals

Determining Eligibility

The NLDC will be responsible for determining the eligibility of a claim for, and the amount of payment in accordance with State regulations and NLDC procedures. Once the final determination is made, adjustments may be made as a result of the grievance procedures or if the NLDC is directed by the State government or a court, to make an adjustment as a result of a review of a claimant's grievance.

Appeals

The NLDC will promptly review all written appeals in accordance with applicable law, regulations and policies. It will consider a written appeal regardless of form.

A person may file an appeal in any case in which the person believes that NLDC has failed to:

(1) Properly determine that the person qualifies for relocation assistance;
(2) Properly determine the amount of any relocation payment;
(3) Provide appropriate referrals to comparable replacement dwellings or inspect the replacement dwelling in a timely manner;
(4) Waive the time limit for (a) the filing of a claim or an appeal or (b) purchasing, renting or occupying a replacement dwelling; or
(5) Other relocation issues.

Refer to the Grievance Procedure contained in Appendix B for an explanation of the process of appeal. Appendix B is in the form of a notice to be provided to all occupants to be displaced.

Relocation Payments Documentation

The NLDC will maintain in its files complete and proper documentation supporting the determination made with respect to each claim. The determination will be made or approved by the NLDC, or a duly authorized designee.

G. Prior HUD Approval

Not applicable unless Federal funds are utilized. If Federal funds are used, HUD approval will be sought as applicable.

H. Payment of Claims

All residential relocation payments will be made in accordance with the regulations, guidelines and procedures promulgated by State Law and NLDC procedures.

Timing of Payment

A payment will be made by the NLDC as promptly as possible after a claimant's eligibility has been determined and a claim filed. Advance payments may be made in hardship cases, as required by State Law, or if the NLDC determines such advances to be appropriate (i.e., the claimant needs money for security deposit on a replacement site).

Set-Off Against Claim

In instances where otherwise eligible claimants have unpaid financial obligations to the NLDC, the NLDC may set off these obligations against the claimant's relocation payments.

I. Procedures to Avoid Duplicate Payments

Any person who receives a relocation payment as part of an eminent domain award, under the State Laws governing same, shall not receive a duplicate relocation payment of which he may be entitled to under these guidelines. However, the NLDC may make a relocation payment for any difference between the relocation payment prescribed by the court and the amount entitled to such person under these guidelines.

J. Payment Not to be Considered as Income

Federal and State regulations provide that relocation payments are not to be considered as income for Federal Income Tax purposes or for determining eligibility or extent of eligibility of a person under the Social Security Act or any other Federal Law.

K. Termination of Active Relocation Assistance

The NLDC will provide assistance to residential households until permanent relocation has been successfully achieved and all relocation payments have been made. In general, the only circumstances under which the NLDC's relocation effort ceases are the following:

1. The tenant receives all assistance and payment to which it is entitled and has either been successfully relocated or is deceased;

2. The site occupant refuses to accept one or a reasonable number of offers of accommodations meeting the NLDC's relocation standards. (In the case of continuous refusal to admit a relocation interviewer who attempts to provide assistance, visits the site occupant at reasonably convenient times and has, whenever possible, given notice of his intention to visit the site occupant, the NLDC and its staff shall write, telephone or take other reasonable steps to communicate with the site occupant before terminating active assistance).

L. Eviction Policy

Site occupants will be evicted only as a last resort. Eviction in no way effects the eligibility of residential households for relocation payments. The NLDC record will be documented to reflect the specific circumstances surrounding the eviction from NLDC acquired property. Eviction shall be undertaken only for the following reasons:

1. Serious or repeated violations of the terms and conditions of the lease or occupancy agreement.

2. The eviction is allowed by State or local Law and cannot be avoided by the NLDC.

M. Relocation Records and Reports

The NLDC will keep up-to-date records on the relocation of all site occupants. These records shall be retained for inspection and audit for a period of three (3) years following completion of the project or program or the completion of the making of relocation payments, whichever is later.

Relocation Tenant File

The NLDC will develop and also maintain a relocation record, beginning with the information secured during the first interview to assess the needs of the displaced occupant. The record shall contain all data relating to relocation of the displaced occupant, including the nature and dates of services that were provided, the type

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and amount of relocation payments made and the location to which those displaced are relocated, including a description and/or inspection certificate for the accommodation.

Section VI. Anticipated Residential Relocation Expenses

The total expense to relocate 20 residential households is estimated at $251,000. The budget will include payments for replacement housing payments, rental assistance for tenants/households, if required, dislocation payment and moving expense payment for each household. A contingency account will also be budgeted. Funding for the relocation program is to coincide with the phasing of the acquisition of properties.

It is important to note in some cases the NLDC may pay the dislocation payment plus the actual moving costs and no rental assistance payment would be required. If replacement housing is subsidized and/or operated by a non-profit housing corporation, there is a possibility the tenant relocation would not involve an increase in monthly rental costs.

APPENDIX B
NEW LONDON DEVELOPMENT CORPORATION
RELOCATION ASSISTANCE PROGRAM

Grievance Procedures

If the New London Development Corporation (NLDC) staff finds that you are ineligible to receive relocation payments, or if the office approves a smaller payment than you wanted, or if you have any other relocation issues, you may request a full written explanation from NLDC. This explanation will be provided to you within 15 days. If you are still unhappy with NLDC's staff decision, you may make an oral presentation to a committee of the New London Development Corporation formed for this purpose, in the company of an advisor if you so desire. The opportunity for an oral presentation shall be provided within 15 working days of your request.

You may also file a written request for review. In your written request for review, you may include any statement of fact or other material which you feel has a bearing on your appeal. If more time is needed to gather and prepare additional material for review, you may be granted 30 days from the date of your request in order to prepare your information. If you need assistance in preparing your material, the NLDC will help you and will also tell you about other available sources of assistance.

A request for a review by the NLDC must be made not later than six (6) months after the NLDC's initial decision or 30 days prior to the closeout of the project, whichever is earlier.

After you have submitted the new information in support of your request for review, the NLDC will reach a decision within 30 days. If the NLDC disapproves your review application, you are entitled to a review by the Connecticut Department of Economic and Community Development (DECD). You may obtain a DECD review by sending a written request to the DECD Commissioner, 505 Hudson Street, Hartford, CT 06106 within 30 days after you receive the review findings from the NLDC.

In any review of your application for relocation payments by the NLDC or DECD, you have the right to be represented by a lawyer or other counsel, and you may appeal any formal decision by DECD to the courts.

If you have any questions concerning these procedures, please do not hesitate to contact the New London Development Corporation, 165 State Street, Suite 313, New London, CT or telephone (860) 447-8011.

MATERIALS TESTING, INC. 200 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: Milone & MacBroom 716 South Main Street Cheshire, CT 06410	SHEET # 1 OF 1 HOLE NO. : B-1
CONTRACTOR:	PROJECT NAME: New London State Pier	
FOREMAN-DRILLER: TH II	PROJECT #:	
INSPECTOR:	LOCATION: State Pier Road New London, CT	

'GROUND WATER OBSERVATIONS

AT 8 FT. AFTER 0 HOURS

AT FT. AFTER HOURS

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	SS	N/A
SIZE I.D.:	3 1/4"	2 1/4"	
HAMMER WT:		140	
HAMMER FALL:		30"	

DATE START: 12-30-98
DATE FINISH: 12-30-98
SURFACE ELEV:

DEPTH	CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH AT BOT	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE- 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0													Brown f/c sd. & gravel, some silt (fill).
1													
2		1	SS	2.0	1.0	2.0	14	20	19	12			
3													
4													
5													
6												6.0	
7		2	SS	2.0	1.0	7.0	8	9	12	31			Brown f/c sd. & gravel, some cobbles.
8													
9													
10													
11												11.0	
12		3	SS	2.0	1.5	12.0	3	3	4	5			Brown f/c sd. & gravel (strong petroleum odor).
13													
14													
15													
16													
17		4	SS	2.0	1.0	17.0	3	3	12	32			
18													
19													
20													
21													
22		5	SS	2.0	1.0	22.0	5	8	12	10			
23													
24													
25													
26													
27		6	SS	2.0	1.5	27.0	4	5	8	12			
28													
29													
30													
31													
32		7	SS	2.0	1.0	32.0	6	8	8	10		32.0	

ROUND SURFACE TO FT. USED " CASING THEN " CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%, LITTLE= 10-20% SOME= 20-35% AND= 35-50%

E.O.B.

HOLE NO. B-1

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0													Brown f/c sd. & gravel, some silt (fill).
1													
2		1	SS	2.0	1.0	2.0	14	20	19	12			
3													
4													
5													
6												6.0	
7		2	SS	2.0	1.0	7.0	8	9	12	31			Brown f/c sd. & gravel, some cobbles.
8													
9													
10													
11												11.0	
12		3	SS	2.0	1.5	12.0	3	3	4	5			Brown f/c sd. & gravel (strong petroleum odor).
13													
14													
15													
16													
17		4	SS	2.0	1.0	17.0	3	3	12	32			
18													
19													
20													
21													
22		5	SS	2.0	1.0	22.0	5	8	12	10			
23													
24													
25													
26													
27		6	SS	2.0	1.5	27.0	4	5	8	12			
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30													
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5													
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17		4	SS	2.0	1.0	17.0	3	3	12	32			
18													
19													
20													
21													
22		5	SS	2.0	1.0	22.0	5	8	12	10			
23													
24													
25													
26													
27		6	SS	2.0	1.5	27.0	4	5	8	12			
28													
29													
30													
31													
32		7	SS	2.0	1.0	32.0	6	8	8	10		32.0	

ROUND SURFACE TO FT. USED " CASING THEN " CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%, LITTLE= 10-20% SOME= 20-35% AND= 35-50%

E.O.B.

HOLE NO. B-1

ALLTERRAIN TESTING, INC.
[illegible]
MILFORD, CONNECTICUT 06460

CLIENT: [illegible]
[illegible]
Chicago, IL 60610

SHEET 4 1 OF 1

HOLE NO.: B-1

CONTRACTOR:

PROJECT NAME: New London State Pier

DRILLING EQUIPMENT: [illegible]

PROJECT #:

INSPECTOR:

LOCATION: [illegible]
New London, CT

DRILLING WATER OBSERVATIONS

AT 8 FT. AFTER 8 HOURS

AT FT. AFTER HOURS

CASING SAMPLER CORE BARREL

TYPE: HSA CT

I.D.: [illegible]

HAMMER TYPE: 140

HAMMER FALL: 30"

DATE START: 12-30-98

DATE FINISH: 12-30-98

SURFACE ELEV:

CASING BLOWS PER HALF	SAMPLE NO.	TYPE	PEN.	REC.	DEPTH IN FEET	BORING & PIPE ID DATA (TORVANE) 0.5	0.75	1.25	1.75	STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
											Brown f/c sd. & gravel, some silt (fill).
	1	SS	2.0	1.0	2.0	14	20	13	12		
	2	SS	2.0	1.0	4.0	6	7	12	21	4.0	Brown f/c sd. & gravel, some silt(fill).
	3	SS	2.0	1.5	7.0	3	3	4	6	11.0	Brown m sd. & gravel (strong petroleum odor).
	4	SS	2.0	1.0	10.0	3	2	22	32		
	5	SS	2.0	1.0	12.0	5	2	12	10		
	6	SS	2.0	1.5	14.5	4	3	8	12		
	7	SS	2.0	1.0	16.0	5	8	8	10	20.0	

BORING TERMINATED AT 16.0 FT.

BORING BACKFILLED WITH CUTTINGS

WATER DEPTH: FT. AFTER HOURS

CASING: FT. WATER: FT. DRILLER: [illegible]

HOLE NO. B-1

MATERIALS TESTING, INC. 200 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: Milone & MacBroom 716 South Main Street Cheshire, CT 06410	SHEET # 1 OF 1 HOLE NO. : B-2
CONTRACTOR:	PROJECT NAME: New London State Pier	
FOREMAN-DRILLER: TH II	PROJECT #:	
INSPECTOR:	LOCATION: State Pier Road New London, CT	

'GROUND WATER OBSERVATIONS

AT DRY FT. AFTER 0 HOURS

AT FT. AFTER HOURS

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	SS	N/A
SIZE I.D.:	3 1/4"	2 1/4"	
HAMMER WT:		140	
HAMMER FALL:		30"	

DATE START: 12-30-98
DATE FINISH: 12-30-98
SURFACE ELEV:

DEPTH	CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH AT BOT	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE - 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0												0.3	Asphalt.
1													
2		1	SS	2.0	1.0	2.0	5	8	7	12		1.5	Black sd. & gravel (fill).
3													Brown F/C sd. & gravel., some cobbles & boulders.
4													
5		2	SS	0.0	0.0	5.0	50						
6													
7													
8													
9												9.0	
10													Brown F/C sd. & gravel.
11													
12		3	SS	2.0	1.5	12.0	11	26	23	12			
13													
14													
15													
16												16.0	
17		4	SS	2.0	1.0	17.0	8	11	9	8			Brown M/F sd. , tr. gravel.
18													
19													
20													
21													
22		5	SS	2.0	1.5	22.0	6	8	8	10		22.0	
23													E.O.B.
24													
25													
26													
27													
28													
29													
30													
31													
32													

GROUND SURFACE TO FT. USED * CASING THEN * CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%, LITTLE= 10-20% SOME= 20-35% AND= 35-50%

HOLE NO. B-2

MATERIALS TESTING, INC.
329 ROWE AVENUE
MILFORD, CONNECTICUT 06460

CLIENT: Williams & Mackenzie
714 South State Street
Chesshire, CT 06410

SHEET # 1 OF 1

HOLE NO.: B-2

CONTRACTOR:

PROJECT NAME: New London State Pier

FOREMAN-DRILLER: TH II

PROJECT #:

INSPECTOR:

LOCATION: State Pier Road
New London, CT

DRIVING WATER OBSERVATIONS

AT DRY FT. AFTER 0 HOURS FT.

AT FT. AFTER HOURS

CASING: SAMPLER: BAR: CORE:

TYPE: NSA SS NWA

SIZE I.D.: 3 1/4" 2 1/4"

HAMMER WT.: 140

HAMMER FALL: 30"

DATE START: 12-30-92

DATE FINISH: 12-30-92

SURFACE ELEV:

CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	DEPTH AT BOT	BLOWS PER 6" ON SAMPLER (FORCE ON TUBE) 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
											0.3	Asphalt.
	1	SS	2.0	1.0	2.0	5	8	7	12		1.5	Black sd. & gravel (fill). Brown F/C sd. & gravel, some cobbles & boulders.
	2	SS	2.0	0.0	5.0	50						
											6.0	Brown F/C sd. & gravel.
	3	SS	2.0	1.5	12.0	11	28	29	12			
											16.0	Brown M/F sd., tr. gravel.
	4	SS	2.0	1.0	17.0	8	11	9	6			
	5	SS	2.0	1.5	22.0	6	8	8	10		22.0	E.O.B.

PROPORTIONS USED:	FT.	HRS.	CASING:	BARE	TO	FT.	
			SLURRY:	WASHED	DRILLED	IN-SIT	
			DRILLING MUD:	LOSS/+ GAIN	LOSS/- GAIN	ADD+ TO SIT	

HOLE NO. B-2

MATERIALS TESTING, INC. 200 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: Milone & MacBroom 716 South Main Street Cheshire, CT 06410	SHEET # 1 OF 1 HOLE NO.: B-2
CONTRACTOR:	PROJECT NAME: New London State Pier	
FOREMAN-DRILLER: TH II	PROJECT #:	
INSPECTOR:	LOCATION: State Pier Road New London, CT	

'GROUND WATER OBSERVATIONS

AT DRY FT. AFTER 0 HOURS

AT FT. AFTER HOURS

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	SS	N/A
SIZE I.D.:	3 1/4"	2 1/4"	
HAMMER WT:		140	
HAMMER FALL:		30"	

DATE START: 12-30-98
DATE FINISH: 12-30-98
SURFACE ELEV:

DEPTH	CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH AT BOT	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE- 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0												0.3	Asphalt.
1													
2		1	SS	2.0	1.0	2.0	5	8	7	12		1.5	Black sd. & gravel (fill).
3													Brown F/C sd. & gravel., some cobbles & boulders.
4													
5		2	SS	0.0	0.0	5.0	50						
6													
7													
8													
9												9.0	
10													Brown F/C sd. & gravel.
11													
12		3	SS	2.0	1.5	12.0	11	26	23	12			
13													
14													
15													
16												16.0	
17		4	SS	2.0	1.0	17.0	8	11	9	8			Brown M/F sd. , tr. gravel.
18													
19													
20													
21													
22		5	SS	2.0	1.5	22.0	6	8	8	10		22.0	
23													E.O.B.
24													
25													
26													
27													
28													
29													
30													
31													
32													

ROUND SURFACE TO FT. USED " CASING THEN " CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%, LITTLE= 10-20% SOME= 20-35% AND= 35-50%

HOLE NO. B-2

MATERIALS TESTING, INC.
200 ROWE AVENUE
MILFORD, CONNECTICUT 06460

CLIENT: Mangia & Associates
7th South Elm Street
Greenville, CT 06418

SHEET: 1 OF 1
HOLE NO.: B-2

COMPACTOR:

PROJECT NAME: New London State Pier

PROGRAM-PROJECT: TMB

PROJECT #:

INSPECTOR:

LOCATION: Pier Road
New London, CT

GROUND WATER OBSERVATIONS:

AT DRY FT. AFTER 0 HOURS

AT FT. AFTER HOURS

CASING SAMPLER BAIL

TYPE: HSA SS HSA
SIZE I.D.: 4-1/4" 2-1/4"
HAMMER WT.: 140 140
HAMMER FALL: 30" 30"

DATE START: 12-20-00
DATE FINISH: 12-20-00

SURFACE ELEV.:

SAMPLE NUMBER	BLOWS PER 6"	SAMPLE									STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL (MOIST., COLOR, LOSS OF WASH WATER, ETC.)
		NO.	TYPE	PEN.	REC.	DEPTH OF SAMPLE	0-6	6-12	12-18	18-24		
											0.3	Asphalt.
1	8	SS	2.0	1.0	2.0		5	8	7	12	1.8	Black sand & gravel (fill). Brown F.C. sand, & gravel, some cobbles & boulders.
2	5	SS	2.0	0.0	0.0		56					
											6.0	Brown F.C. sand, & gravel.
3	9	SS	2.0	1.5	12.0		17	28	20	12		
											16.0	Brown M-F sand, & gravel.
4	8	SS	2.0	1.0	7.0		8	11	9	9		
5	8	SS	0.0	1.0	22.0		6	8	5	11	22.0	E.O.B.

Sample number 1-n | Type: Undist. | Pen.: Pushing | Rec.: Pushing | Blows per 6": Casing | Sampler | Hammer wgt. | Hammer fall | Strata change depth: Elev. | Field identification of soil: Moist., color, odor, consistency, etc.

HOLE NO. B-2

MATERIALS TESTING, INC.
200 ROWE AVENUE
MILFORD, CONNECTICUT 06460

CLIENT: Milone & MacBroom
716 South Main Street
Cheshire, CT 06410

SHEET # 1 OF 1
HOLE NO. : B-4

CONTRACTOR:

PROJECT NAME: New London State Pier

FOREMAN-DRILLER: TH II

PROJECT #:

INSPECTOR:

LOCATION: State Pier Road
New London, CT

'GROUND WATER OBSERVATIONS

AT 20' FT. AFTER 0 HOURS

AT FT. AFTER HOURS

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	SS	N/A
SIZE I.D.:	3 1/4"	2 1/4"	
HAMMER WT:		140	
HAMMER FALL:		30"	

DATE START: 12-30-98
DATE FINISH: 12-30-98
SURFACE ELEV:

DEPTH	CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH AT BOT	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE - 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0												0.5	Topsoil.
1													Black brown fine sd. & gravel, tr. silt (fill).
2		1	SS	2.0	1.0	2.0	3	5	8	6			
3													
4													
5													
6		2	SS	2.0	1.5	7.0	4	2	2	4		6.0	
7													Brown F/C sd. & gravel.
8												8.0	
9													Brown F/C sd. & gravel, some cobbles.
10													
11													
12		3	SS	2.0	1.0	12.0	13	33	31	25			
13													
14													
15													
16													
17		4	SS	2.0	1.0	17.0	6	11	8	6			Brown M/F sd. , tr. gravel.
18													
19													
20												20.0	
21													Brown f/c sd. & gravel, tr. silt.
22		5	SS	2.0	0.5	22.0	6	10	10	8		22.0	
23													E.O.B.
24													
25													
26													
27													
28													
29													
30													
31													
32													

GROUND SURFACE TO FT. USED * CASING THEN * CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%, LITTLE= 10-20% SOME= 20-35% AND= 35-50%

HOLE NO. B-4

| | | |

MATERIALS TESTING, INC. 200 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: Milone & MacBroom 716 South Main Street Cheshire, CT 06410	SHEET # 1 OF 1 HOLE NO.: B-4
CONTRACTOR:	PROJECT NAME: New London State Pier	
FOREMAN-DRILLER: TH II	PROJECT #:	
INSPECTOR:	LOCATION: State Pier Road New London, CT	

'GROUND WATER OBSERVATIONS

AT 20' FT. AFTER 0 HOURS

AT FT. AFTER HOURS

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	SS	N/A
SIZE I.D.:	3 1/4"	2 1/4"	
HAMMER WT:		140	
HAMMER FALL:		30"	

DATE START: 12-30-98
DATE FINISH: 12-30-98
SURFACE ELEV:

DEPTH	CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH AT BOT	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE- 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0												0.5	Topsoil.
1													Black brown fine sd. & gravel, tr. silt (fill).
2		1	SS	2.0	1.0	2.0	3	5	8	6			
3													
4													
5													
6		2	SS	2.0	1.5	7.0	4	2	2	4		6.0	
7													Brown F/C sd. & gravel.
8												8.0	
9													Brown F/C sd. & gravel, some cobbles.
10													
11													
12		3	SS	2.0	1.0	12.0	13	33	31	25			
13													
14													
15													
16													
17		4	SS	2.0	1.0	17.0	6	11	8	6			Brown M/F sd. , tr. gravel.
18													
19													
20												20.0	
21													Brown f/c sd. & gravel, tr. silt.
22		5	SS	2.0	0.5	22.0	6	10	10	8		22.0	
23													E.O.B.
24													
25													
26													
27													
28													
29													
30													
31													
32													

GROUND SURFACE TO FT. USED * CASING THEN * CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%, LITTLE= 10-20% SOME= 20-35% AND= 35-50%

HOLE NO. B-4

MATERIALS TESTING, INC.
[illegible] LEWIS AVENUE
MILFORD, CONNECTICUT 06460

CLIENT: [illegible] & Mc[illegible]
[illegible] Main Street
[illegible], CT 06110

SHEET # 1 OF 1

HOLE NO.: B-4

CONTRACTOR:

PROJECT NAME: New London Blue Pier

FOREMAN DRILLER: TM B

PROJECT #:

INSPECTOR:

LOCATION: Blue Pier Road
New London, CT

DRILLING WATER OBSERVATIONS

AT 30' FT. AFTER 6 HOURS

AT FT. AFTER HOURS

CASING: TYPE: HWA BS BWA
SIZE I.D.: 3 1/4" 2 1/4"
HAMMER WT: 140
HAMMER FALL: 30"

CODE
DATE START: 12-30-99
DATE FINISH: 12-30-99

SURFACE ELEV:

CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	DEPTH AT BOT	BLOWS PER 6" ON SAMPLER (FORCE OF TUBE) 0-6	6-12	12-18	18-24	STRATA CHANGE DEPTH (FT.)	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
										0.5	Topsoil
											Black brown fine sd. & gravel tr. silt (fill)
	1	SS	2.0	1.0	5.0	3	5	8	6		
	2	SS	2.0	1.5	7.0	4	7	12	4	6.0	Brown F/C sd. & gravel
										8.0	Brown F/C sd. & gravel, some cobbles.
	3	SS	2.0	1.0	10.0	13	13	31	25		
	4	SS	2.0	1.0	12.0	5	11	8	8		Brown M/F sd., tr. gravel
										20.5	Brown f/c sd. & gravel, tr. silt.
	5	SS	2.0	0.5	22.0	8	16	10	8	22.0	E.O.B.

DRILLING CONTRACTOR:	FT.	DATE	CASING	DATE	No.	FT.
	SIZE/TYPE	SAMPLER	CHISELS	BIT		
FOREMAN DRILLER:	TRAINEE:	HRS.	HOURS in this	HOURS in this	HOLE NO.: B-4	

MATERIALS TESTING, INC. 200 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: **Milone & MacBroom** **716 South Main Street** **Cheshire, CT 06410**	SHEET # 1 OF 1 HOLE NO. : B-5
CONTRACTOR:	PROJECT NAME: **New London State Pier**	
FOREMAN-DRILLER: TH II	PROJECT #:	
INSPECTOR:	LOCATION: **State Pier Road** **New London, CT**	
'GROUND WATER OBSERVATIONS AT DRY FT. AFTER HOURS AT FT. AFTER HOURS	TYPE: **HSA** SS **NG2** SIZE I.D.: 3 1/4" 2 1/4" HAMMER WT: 140 HAMMER FALL: 30"	DATE START: 12-29-98 DATE FINISH: 12-29-98 SURFACE ELEV:

DEPTH	CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH AT BOT	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE- 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0													Brown F/C sd. & gravel, tr. wood (fill).
1													
2		1	SS	2.0	1.0	2.0	2	6	9	13			
3													
4													
5													
6												5.5	
7		2	SS	2.0	1.5	7.0	15	9	12	13			Brown F/C sd. & gravel.
8													
9													
10												10.0	
11													Brown F/C sd. & gravel, some silt.
12		3	SS	2.0	1.5	12.0	30	29	22	21			
13												13.0	
14											3		Refusal.
15											3		
16											3		
17											3		
18		4	C	5.0	4.5	18.0					3	18.0	
19													E.O.B.
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
32													

GROUND SURFACE TO FT. USED " CASING THEN " CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%, LITTLE= 10-20% SOME= 20-35% AND= 35-50%

HOLE NO. B-5

MATERIALS TESTING, INC. 200 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: Adams & Associates 316 South Main Street Ansonia, CT 06410		SHEET 4 1 OF 1 HOLE NO.: B-5
CONTRACTOR:	PROJECT NAME: New London State Pier		
FOREMAN/DRILLER: Phil	PROJECT #:		
INSPECTOR:	LOCATION: State Pier Road New London, CT		
GROUND WATER OBSERVATIONS AT DRY FT. AFTER HOURS AT FT. AFTER HOURS	TYPE: HSA SS HSS SIZE I.D.: 2 1/4" 2 1/4" HAMMER WT.: 140 HAMMER FALL: 30"	CORE CASING BARRELLER SAM DATE START: 12-29-99 DATE FINISH: 12-29-99 SURFACE ELEV.	

CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	DEPTH AT SAMPLE	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE- 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (MOIST, COLOR, LOSS OF WASH WATER, ETC.)
												Brown F/C sd. & gravel, tr. wood (fill).
	1	SS	2.0	1.0	3.0	2	3	9	12			
											5.0	
	2	SS	2.0	0.5	7.5	15	9	13	14			Brown F/C sd. & gravel.
											10.0	
												Brown F/C sd. & gravel, some silt.
	3	SS	2.0	1.0	12.0	50	29	35	27			
											13.0	
												Refusal.
											3	
											3	
											3	
											3	
	4	SS	2.0	1.5	16.0						3	16.0
												E.O.B.

MATERIALS TESTING, INC. 200 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: Milone & MacBroom 716 South Main Street Cheshire, CT 06410	SHEET # 1 OF 1 HOLE NO.: B-5
CONTRACTOR:	PROJECT NAME: New London State Pier	
FOREMAN-DRILLER: TH II	PROJECT #:	
INSPECTOR:	LOCATION: State Pier Road New London, CT	

'GROUND WATER OBSERVATIONS

AT DRY FT. AFTER HOURS

AT FT. AFTER HOURS

	CASING	SAMPLER	CORE BAR
TYPE:	HSA	SS	NG2
SIZE I.D.:	3 1/4"	2 1/4"	
HAMMER WT:		140	
HAMMER FALL:		30"	

DATE START: 12-29-98
DATE FINISH: 12-29-98
SURFACE ELEV:

DEPTH	CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH AT BOT	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE- 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0													Brown F/C sd. & gravel, tr. wood (fill).
1													
2		1	SS	2.0	1.0	2.0	2	6	9	13			
3													
4													
5													
6												5.5	
7		2	SS	2.0	1.5	7.0	15	9	12	13			Brown F/C sd. & gravel.
8													
9													
10												10.0	
11													Brown F/C sd. & gravel, some silt.
12		3	SS	2.0	1.5	12.0	30	29	22	21			
13												13.0	
14											3		Refusal.
15											3		
16											3		
17											3		
18		4	C	5.0	4.5	18.0					3	18.0	
19													E.O.B.
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
32													

GROUND SURFACE TO FT. USED " CASING THEN " CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%, LITTLE= 10-20% SOME= 20-35% AND= 35-50%

HOLE NO. B-5

MATERIALS TESTING, INC.
230 POWS AVENUE
MILFORD, CONNECTICUT 06460

CLIENT: Moore & Berkeson
216 Seven Main Street
Glastonby, CT 06170

SHEET 3 1 OF 1

HOLE NO.: B-5

CONTRACTOR:

PROJECT NAME: New London State Pier

FOREMAN DRILLER: Tait

PROJECT #:

INSPECTOR:

LOCATION: State Pier Road
New London, CT

DRILLING METHOD/OBSERVATIONS

AT DRY FT. AFTER HOURS

AT FT. AFTER HOURS

CASING SAMPLER BIT CORE

TYPE: HSA SS HQ2

SIZE I.D.: 6 1/4" 2 1/4"

HAMMER WT.: 140

HAMMER FALL: 30"

DATE START: 12-29-98

DATE FINISH: 12-29-98

SURFACE ELEV.:

CASING BLOWS PER HALF MINUTE	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	DEPTH IN FT BELOW	BLOWS PER 6" ON SAMPLER (FORCE ON TOOL) 0-6	6-12	12-18	18-24	STRATA CHANGE DEPTH ELEV.		FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0												
1												
2	1	SS	2.0	1.0	2.0	2	6	6	10			
3												
4												
5												
6												
7											5.5	
8	2	SS	2.0	1.5	7.4	15	3	12	42			Brown F/C sd. & gravel.
9												
10												
11											10.0	
12												Brown F/C sd. & gravel, some silt.
13	3	SS	2.0	1.5	12.0	30	29	22	21			
14											13.0	
15										2		Refusal.
16										2		
17										2		
18										2		
19	4	D	5.0	4.5	18.0					2	16.0	
20												E.O.B.
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
32												

CASING BLOWS 16 FT. LOST

WATER LEVEL DATA: DATE TIME

DRILLING DATA: START FINISH

CASING SIZE 6 SAMPLER 2 1/4 BIT HSA CORING BIT

DRILLER: DRILLING CO.: DRILLING NO.: 6

HOLE NO.: B-5

MATERIALS TESTING, INC. 200 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: **Milone & MacBroom** **716 South Main Street** **Cheshire, CT 06410**	SHEET # 1 OF 1 HOLE NO. : B-6
CONTRACTOR:	PROJECT NAME: **New London State Pier**	
FOREMAN-DRILLER: TH II	PROJECT #:	
INSPECTOR:	LOCATION: **State Pier Road** **New London, CT**	
'GROUND WATER OBSERVATIONS AT DRY FT. AFTER HOURS AT FT. AFTER HOURS	CASING / SAMPLER / CORE BAR TYPE: **HSA** / SS SIZE I.D.: 3 1/4" / 2 1/4" HAMMER WT: 140 HAMMER FALL: 30"	DATE START: 12-29-98 DATE FINISH: 12-29-98 SURFACE ELEV:

DEPTH	CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH AT BOT	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE- 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0													Brown F/C sd. & gravel, some silt, some rubble (brick) fill.
1													
2		1	SS	2.0	0.5	2.0	16	10	12	9			
3													
4													
5													
6													
7		2	SS	2.0	0.2	7.0	6	10	17	21			
8													
9													
10													
11												10.5	
12		3	SS	2.0	1.0	12.0	9	14	26	25			Brown F/C sd. & gravel, some cobbles, tr. silt.
13													
14													
15													
16		4	SS	0.6	0.5	15.6	29	100				16.0	
17													Refusal.
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
32													

GROUND SURFACE TO FT. USED * CASING THEN * CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%, LITTLE= 10-20% SOME= 20-35% AND= 35-50%

HOLE NO. B-6

BLA TERMALE TESTING, INC. 205 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: Mirabella Associates 715 South Main Street Ansonia, CT 06401		SHEET # 1 OF 1 HOLE NO.: B-6
CONTRACTOR:	PROJECT NAME: New London Boat Ramp		
FOREMAN-CHARGE: TH II	PROJECT #:		
INSPECTOR:	LOCATION: State Pier Road New London, CT		
GROUND WATER OBSERVATIONS AT DRY FT. AFTER HOURS AT FT. AFTER HOURS	CASING SAMPLER BAR TYPE: HSA SS SIZE I.D.: 3 1/4" 2 1/4" HAMMER WT.: 140 HAMMER FALL: 30"	CORE: DATE START 12-29-98 DATE FINISH 12-29-98 SURFACE ELEV.	

CASING BLOWS PER 6"	SAMPLE NUMBER	TYPE	PEN.	REC.	DEPTH AT BOT.	BLOWS PER 6" ON SAMPLER FORCE ON TUBE				STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
						0-6	6-12	12-18	18-24		Brown F.C. sd. & gravel, some silt, some rubble (block) fill
	1	SS	2.0	0.5	2.0	15	15	12	9		
	2	SS	2.0	1.2	7.0	6	10	12	21		
	3	SS	2.0	1.0	12.0	9	14	29	42	10.5	Brown F/C sd. & gravel, some cobbles, tr. silt
	4	SS	0.5	0.5	15.5	20	100			16.0	Refusal

HOLE NO. B-6

MATERIALS TESTING, INC. 200 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: Milone & MacBroom 716 South Main Street Cheshire, CT 06410	SHEET # 1 OF 1 HOLE NO.: B-6
CONTRACTOR:	PROJECT NAME: New London State Pier	
FOREMAN-DRILLER: TH II	PROJECT #:	
INSPECTOR:	LOCATION: State Pier Road New London, CT	
'GROUND WATER OBSERVATIONS AT DRY FT. AFTER HOURS AT FT. AFTER HOURS	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 3 1/4" / 2 1/4" HAMMER WT: 140 HAMMER FALL: 30"	DATE START: 12-29-98 DATE FINISH: 12-29-98 SURFACE ELEV:

DEPTH	CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH AT BOT	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE- 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0													Brown F/C sd. & gravel, some silt, some rubble (brick) fill.
1													
2		1	SS	2.0	0.5	2.0	16	10	12	9			
3													
4													
5													
6													
7		2	SS	2.0	0.2	7.0	6	10	17	21			
8													
9													
10													
11												10.5	
12		3	SS	2.0	1.0	12.0	9	14	26	25			Brown F/C sd. & gravel, some cobbles, tr. silt.
13													
14													
15													
16		4	SS	0.6	0.5	15.6	29	100				16.0	
17													Refusal.
18													
19													
20													
21													
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
32													

GROUND SURFACE TO FT. USED " CASING THEN " CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%. LITTLE= 10-20% SOME= 20-35% AND= 35-50%

HOLE NO. B-6

MATERIALS TESTING, INC. 200 ROWE AVENUE MILFORD, CONNECTICUT 06460	CLIENT: Milone & MacBroom 716 South Main Street Cheshire, CT 06410	SHEET # 1 OF 1 HOLE NO.: B-7
CONTRACTOR:	PROJECT NAME: New London State Pier	
FOREMAN-DRILLER: TH II	PROJECT #:	
INSPECTOR:	LOCATION: State Pier Road New London, CT	
'GROUND WATER OBSERVATIONS AT DRY FT. AFTER HOURS AT FT. AFTER HOURS	CASING / SAMPLER / CORE BAR TYPE: HSA / SS SIZE I.D.: 3 1/4" / 2 1/4" HAMMER WT: 140 HAMMER FALL: 30"	DATE START: 12-29-98 DATE FINISH: 12-29-98 SURFACE ELEV:

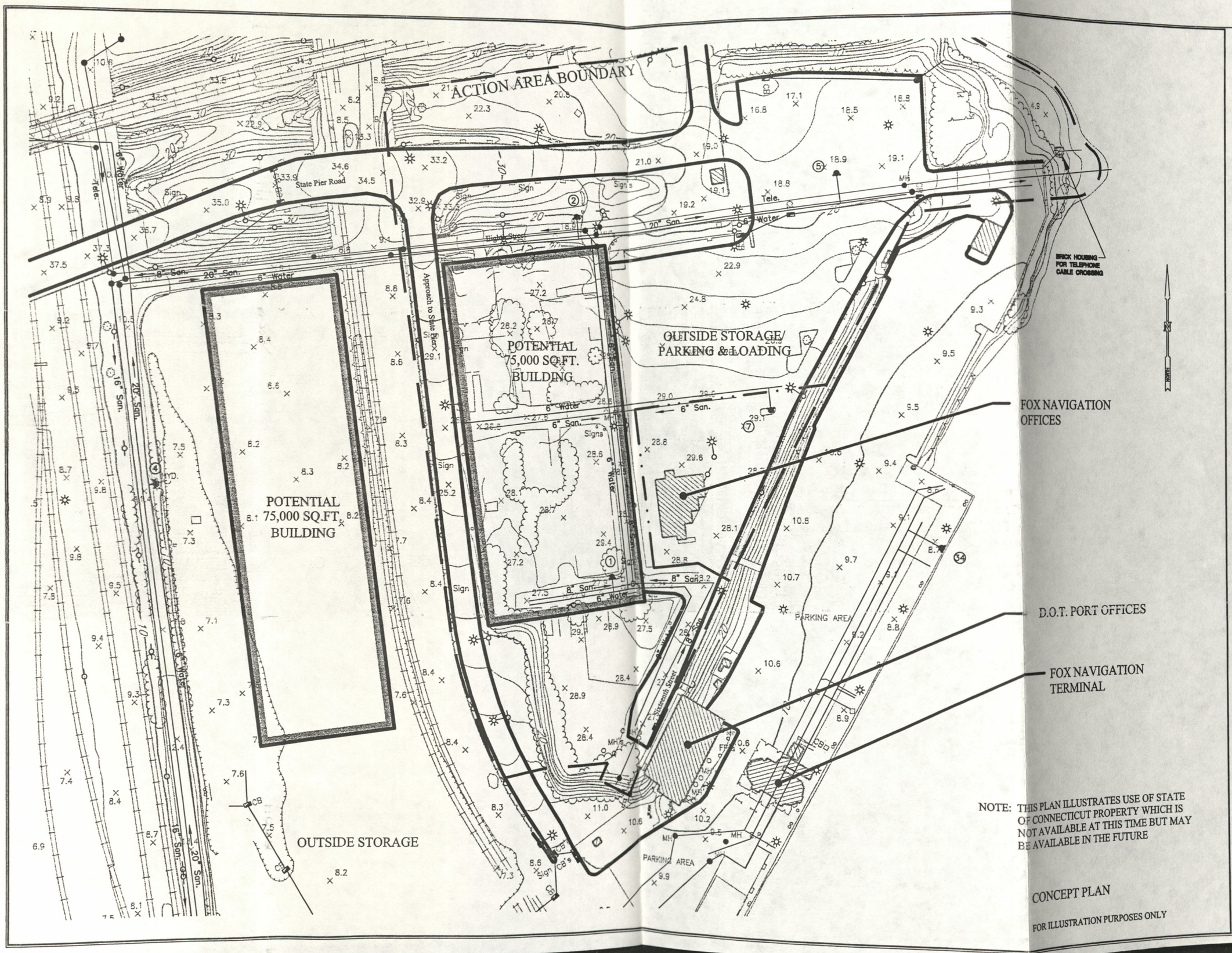
DEPTH	CASING BLOWS PER HALF METER	SAMPLE NO.	SAMPLE TYPE	SAMPLE PEN.	SAMPLE REC.	SAMPLE DEPTH AT BOT	BLOWS PER 6" ON SAMPLER -FORCE ON TUBE- 0-6	6-12	12-18	18-24		STRATA CHANGE DEPTH ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
0													
1													Brown F/C sd. & gravel, some silt, tr. glass (fill).
2		1	SS	2.0	1.5	2.0	4	10	7	9			
3													
4													
5													
6												6.0	
7		2	SS	2.0	1.0	7.0	9	4	25	89			Brown F/C sd. & gravel, some cobbles.
8													
9													
10													
11													
12		3	SS	1.7	1.0	11.7	28	36	100				
13												13.0	
14											3		Boulders.
15											2		
16											1		
17											2		
18		4	C	5.0	2.3	18.0					3	18.0	
19													Refusal.
20													NOTE: Attempted sample @ 18'
21													50 blows, no penetration.
22													
23													
24													
25													
26													
27													
28													
29													
30													
31													
32													

GROUND SURFACE TO FT. USED " CASING THEN " CASING TO FT.

D= DRY W= WASHED C=CORED P= PIT A= AUGER

PROPORTIONS USED: TRACE= 1- 10%, LITTLE= 10-20% SOME= 20-35% AND= 35-50%

HOLE NO. B-7



NOTE: THIS PLAN ILLUSTRATES USE OF STATE OF CONNECTICUT PROPERTY WHICH IS NOT AVAILABLE AT THIS TIME BUT MAY BE AVAILABLE IN THE FUTURE

CONCEPT PLAN

FOR ILLUSTRATION PURPOSES ONLY

In Association with:
HMA
Harrell Micialowski Associates
Planning Consultants Hamden, CT

SITE PLAN - ALTERNATE 1

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

Professional Landscape Architecture Land Planning Land Development Consultants
MILONE & MACBROOM
78 South Main Street
Oakdown, Connecticut 06450
(203) 271-1773 FAX (203) 272-9733

DESIGNED	DRAWN DLO	CHECKED VCM
SCALE 1" = 100'		
DATE FEBRUARY 9, 1999		
PROJECT NO. 1876-02-1		
DWG NAME SITEALT1.DWG		
SHEET NO. FIG. A1		

ACTION AREA BOUNDARY

OUTSIDE STORAGE/
PARKING & LOADING

POTENTIAL
100,000 SQ.FT.
BUILDING

POTENTIAL
50,000 SQ.FT.
BUILDING

FOX NAVIGATION
OFFICES

D.O.T. PORT OFFICES

FOX NAVIGATION
TERMINAL

BRICK HOUSING
FOR TELEPHONE
CABLE CROSSING

State Pier Road

Eighth Street

Seventh Street

Approach to State Pier

PARKING AREA

NOTE: THIS PLAN ILLUSTRATES USE OF STATE OF CONNECTICUT PROPERTY WHICH IS NOT AVAILABLE AT THIS TIME BUT MAY BE AVAILABLE IN THE FUTURE

CONCEPT PLAN

FOR ILLUSTRATION PURPOSES ONLY

In Association with:
HMA
Harrall Michalowski Associates
Planning Consultants Hamden, CT

SITE PLAN - ALTERNATE 2

STATE PIER
MUNICIPAL DEVELOPMENT PLAN
NEW LONDON, CONNECTICUT

Milone & MacBroom
Registered Landscape Architects and Environmental Science
76 South Main Street
Cheshire, Connecticut 06410
(203) 271-1773 FAX (203) 272-9733

DESIGNED	---
DRAWN	DLO
CHECKED	VCM
SCALE	1" = 100'
DATE	FEBRUARY 9, 1999
PROJECT NO.	1876-02-1
DWG NAME	SITEALT2.DWG
SHEET NO.	FIG. A2

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New London, Conn